ROCKS and MINERALS

SEPTEMBER - OCTOBER, 1952

A Magazine for Mineralogists, Geologists and Collectors

Official Journal of the Rocks and Minerals Association

60c

Whole No. 230

Vol. 27, No. 9 - 10

49th LIST OF FINE MINERALS

DIOPTASE, Altai Mts., Russia. Xld. on rock. 2x1 ¼x1 ¼ ..... $ 8.50
Another — fine xls. on sawed matrix. 3x1 ¾x1 ½ 20.00
BORNITE, Cornwall. Excellent xls. on mass. 3x2 ½x1 ¼ (Calvert Coll.) 7.50
PYROMORPHITE, Ems, Nassau. Large (up to ½") brown xls. on rock. 2 ½x2 ¼ 5.00
ESSONITE, Raymond, Maine. Xls. w. Vesuvianite xls. 2x2x1 ¾ 2.00
SPHALERITE, Santander, Spain. Xlline. translucent mass. 2x2 ½x1 ½ .. 2.00
SIDERITE, Saxony. Group of lenticular light-colored xls. 2x1 ¼x1 ..... 1.25
GOLD v. ELECTRUM, Hungary. Large xlline. plates on rock. 2x1 ¼x1 .. 12.50
QUARTZ, Brazil. Doubly-terminated xl. with dense inclusions of capillary blue Tourmaline. Very good. 3x1 ½ 5.00
SANBORNITE & GILLESPITE, California. Xlline. w. Celsian. 3x2x1 ¼ .. 2.00
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TOURMALINE, Newry, Me. Grass-green radiating xls. in Mica. 4x2 ½x1 3.00
ANGLESITE, Mexico. Brown xlline. masses in SULPHUR. 2x1 ½x1 ¼ .. 1.25
HEMATITE, Elba. Xld. mass with iridescent tarnish. 3 ½x2 ½x2 ..... 6.00
TOURMALINE, Elba. Numerous pale-pink xls. w. Orthoclase. 3x1 ½ ... 7.50
KYANITE, St. Gotthard. Large xls. in Sericite schist. 4x3 ½x1 ..... 5.00
PYROMORPHITE, Davidson Co., N. C. Minutely xld., green, on Quartz. 3x2 3.00
AZURITE & MALACHITE, Arizona. Polished slab. 2 ½x1 ½x½ 4.00
AZURITE, Tsumeb. 1 ¾" xl. with Bayldonite. 2x1 ¼ 6.00
CHALCOPYRITE, Cornwall. Fine botryoidal mass. "Blister Copper." 3x3 3.50
CROCOITE, Tasmania. Xld. mass. 3 ½x2x1 ¼ 10.00
PSILOMELANE, Sweet Springs, W. Va. Reniform mass. 3x2x1 ¾ 2.00
BERYL, Acworth, N. H. Well-terminated opaque greenish xl. 1 ¾x1 ¼x1 ½ 2.00
SULPHUR, Sicily. Large xls. w. minutely xld. Calcite. 3 ½x2x2 ..... 6.50
APATITE, Maine. Pale lilac tabular xls. on rock. 3x1 ¾x1 ½. Good. 3.50
CINNABAR, Terlingua. Scarlet coating on Calcite. 4x3 ½ 2.50
EPIDOTE, Bourg d'Oisans. Xld. mass. 5x2 ½x2. Fine "old-timer" 10.00
CASSITERITE, Cornwall. Brilliant xls. on mass. 3x1 ½x1 ¼ 6.00
ENARGITE, Butte. Brilliant xls. in cavity of ore. 2 ½x1 ½x1 ¾ 2.00
BISMUTHINITE, Bolivia. Xlline. blades in Cassiterite. 3 ½x1 ½x1 ½ ... 5.00
WURTZITE, Pribram. Mammillary mass. 4 ½x3x1 ¼. 1 ½ lbs. Fl. under LW 5.00
LIVINGSTONITE, Mexico. Xlline. with some rock. 2 ½x1 ½ 1.25
APATITE, Ontario. Green xls. in red Calcite. 5x2 ½x2 ½. 2 lbs. 3.00
MANGANITE, Harz Mts. Group of large term. xls. 3 ½x3x1 ½ 12.50
HEMATITE, St. Gotthard. Xld. on and in Quartz xls. 3x2 ..... 1.50
ARSENIOSIDERITE, France. Thick xlline. crust on Psilomelane. 3x2x2 .. 2.50
DIASPORE, Chester, Mass. Well xld. w. CORUNDOPHILITE on Emery. 2x2x1 ½ 2.50
ACTINOLITE, Tyrol. Xls. in Talc. 3x2 ..... 1.25
PYRITE, Elba. Xld. mass, brilliant. 5x3 ½x2 ½. 3 ½ lbs. 12.50
COVELLITE, Sardinia. Well xld. mass. 1 ¼x1 ..... 1.50
MAGNETITE, French Creek, Pa. Xld. mass w. some Pyrite xls. 4x2x1 ¼ 3.00
CORDIERITE (IOLITE), Bavaria. ¾" xl. in Pyrrhotite. 2 ½x2 ½x1 ½ .. 2.50
SCHROECKINGERITE (DAKEITE), Wyo. Small masses in clay. 2 ½x2x1. Fl. 2.00
CALCITE, Joplin. Fine GOLDEN xl. 5x3x2. Another "old-timer." 6.00
QUARTZ v. MILKY QUARTZ, Ouray. Snow-white xl. grp. 6x3x2 ¼. Very Fine. 7.50
DIABOLEITE, Tiger, Ariz. Mass with **large xls.** associated with Caledonite, etc. 5x3 ½x2. 3 lbs. Unusually good. 35.00
A few good "thumbnail" specimens from classic European localities, averaging 1" in size; NICCOLITE **xled.** 1.00; PYRARGYRITE, xld. mass. .. 2.00
HEMATITE ("IRONROSE"), $1.00; CASSITERITE, twin xl. group 1.00
BOURNONITE, large xls. $1.00; CHALCOPYRITE, brilliant, ... 1.00

HUGH A. FORD

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No lists furnished, but inquiries for specific minerals welcomed.

ROCKS and MINERALS

PUBLISHED
BI-MONTHLY

Edited and Published by
PETER ZODAC

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SEPTEMBER - OCTOBER
1952

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OPEN LETTER TO ALL ROCK HOUNDS

As you sit there reading your ROCKS AND MINERALS you become thirsty. Go to the kitchen and the water is there. You need more light. Press the button and the room is flooded with light.

Sure, you know this. It is stale history and so common that you think nothing of it, that is unless the lights go out or the water supply fails. These conveniences we all take for granted.

The bible of collecting, ROCKS AND MINERALS, is also taken for granted, sometimes little appreciated, in fact many times belittled and condemned.

Yes, my friends, I took our magazine for granted till I received a letter from a Scotch collector. I had asked him for a copy of the British magazine comparable with ROCKS AND MINERALS. He wrote that the collectors of Great Britain have NO such magazine for the rock hound. I could hardly believe that any country so advanced and interested in learning would have no brother ROCKS AND MINERALS. He did send me several copies of the GEMMOLOGIST, a British publication dedicated to the connoisseur jewelers and designers of fine jewelry. No mention is made of the collector or any amateur polishing a cab. Such things are just not done by the normal Englishman. Thank heaven, I hear by the grapevine that there are a few who on the sly enjoy our hobby. More power to them and may they increase rapidly. I, for one, would be glad to help any of them.

Looking back over my files of ROCKS AND MINERALS (1936 to date) I can read a most interesting story between the lines. I see a young man, I believe a mining engineer, named Peter Zodac, so interested and with such faith in us rock hounds that he dedicated his life to helping us. Think it over. Helping us to enjoy our hobby. Here and there in several issues I find people trying to bite the hand that is helping them. As I read these condemnations I remember that it has been my experience that those who could do an equal job have nothing but praise to offer. Please notice: whatever you do, the one who offers the most advice seldom accomplishes anything himself.

Each year I have many visiting rock hounds and I certainly enjoy every one of them. To all I advise that they subscribe for ROCKS AND MINERALS, not only for their own good but for me. The more subscribers the greater the coverage of mineral news. Sooner or later they may write in to brag of their finds. This makes good reading for all.

I wish to send a long distance pat on the back to PETER ZODAC. May he live another hundred years. May he be appreciated by all collectors. May he make a fair profit from ROCKS AND MINERALS. (To this we all agree he is entitled). May he never make so much that he even thinks of retiring or cease publishing ROCKS AND MINERALS.

C. O. Gettings
2001 Starr Ave.
July 20, 1952 Toledo 5, Ohio

SPECIAL NOTICE

The Amateur Lapidary, conducted by Commander John Sinkankas, does not appear in this issue as copy was received much too late for publication. Due to an oversight on our part we failed to notify Commander Sinkankas when his material should be sent it. We deeply regret the ommission of the lapidary department, one of our most interesting features, and do hope that it will always make its appearance from now on.

Honorary Life Member!

Editor R. & M.:

We are honored to have you as an honorary life member of the Rockland County Mineral and Gem Society. Please find your card enclosed.

May you receive further health and strength and guidance from Him who blessed us with so many good things of life.

Lester W. F. Peper
Spring Valley, N. Y.

May 29, 1952

ROCKS and MINERALS

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TIN — AND OTHER THINGS

By FRANK H. WASKEY
Dillingham, Alaska

Eighteen Hundred & Ninety-Seven saw the Press dispatch go from Seattle, Wash., to the world heralding the arrival at that then somnolent port of the "Ton of Gold" from the Klondike.

The spring of 1898 witnessed the great stampedes from the States and Canada via Lynn Canal, St. Michael and the Mackenzie River to Dawson City and its surroundings; 1898 also saw the beginning of placer mining near Nome, Alaska; 1899's summer came and there were hundreds of men with home-made "rockers" on the rich beach along Nome's water front.

That fall, most of these hundreds, their pokes full of gold, hit the streets of Seattle and spent their wealth freely. The "just-a-borning" Seattle Spirit saw its opportunity, and the publicity that went forth concerning the accessibility of that Golden Beach and its easy wealth brought in 1900 the great Nome rush. During June of that fabled year more than 20,000 would-be gold miners landed on that quartz-streaked shore of Alaska.

Many of those thousands, expressing their disappointment that there was "so much gravel mixed with the gold," soon took ship for the farm, the shop, the office and the comforts of home. But that self same summer of 1900 saw a few of those who had what it took panning on practically every creek from Norton Sound to Cape Prince of Wales. And in those pre-plane days it took considerable of "what it takes" to get across rivers and over mountains and tundras.

Among other sections where sluice boxes were set up before that fall were the creeks of the Cape York region, many a day to the west and north. In their cleanups with the gold "a heavy and objectionable constituent accumulated" (1) this material was identified by the late Alfred H. Brooks of the U. S. Geological Survey as Cassiterite. Search for the lode source of this mineral brought to light in situ not only Cassiterite, but Stannite and two new to science Tin minerals, later to be named Hulsite and Paigeite.

The tin bearing formations were found to be more abundant around four massifs; Cape, Potato, Brooks and Ear Mountains and in the valley of Lost River which enters Bering Sea just west of Port Clarence, Alaska.

And with the Tin was a host of accessory minerals. The list of these as given by Adolph Knoph in Bulletin 358 of the U. S. Geological Survey reads like a collector's dream. The writer has long known of these occurrences. But it was not until July, 1951, that opportunity came to visit the section.

Day 1. Plane number 1 took me from Dillingham on Bristol Bay to Bethel on the Kuskokwim River. Plane 2 to Mountain Village on the Lower Yukon, plane 3 to Unalakleet on Norton Sound. No roadhouse in Unalakleet, but Mail Pilot Arthur Johnson, son of a boyhood friend, made me welcome in his home.

Day 2. Left for Nome on the Mail plane enroute from Anchorage, a commodious DC-3. At Moses Point fog turned us back. The trim and smiling hostess told the passengers we could either deplane at Unalakleet or go on to McGrath on the upper Kuskokwim to await next day's plane from Anchorage. All chose to take the extra ride over the mountains and across the Yukon Valley.

Day 3. Enjoying an early morning stroll along the sinuous Kuskokwim, the almost complete absence of mosquitoes was noted. A chance remark brought the information that twice in the previous three weeks an area of two miles on all sides of the town had been sown by plane

with D.D.T. Surely "the world does move."

In the early 1920's several Lode mines on Nixon Fork some 20 miles away by trail produced high grade gold ore with beautiful Galena, Chalcopyrite and other Sulphides. Inquiry about town failed to produce any specimens from the closed mines. What an opportunity was lost when they were working, by this, then on the spot, rainbow chaser!

But the saddest of all words about opportunities not seen, is the fact that about 1910, I was in Cordova, Alaska, when daily train loads of colorful copper carbonates and sulphides (Glance, Bornite, etc.) were being hauled to Cordova for shipment. For many a long year the properties of the Kennecott Company which produced this outstanding ore have been closed. And even the steel of the railroad which was built to haul the ore to tidewater has been taken up.

While waiting the plane to again head Nomeward and exchanging reminiscences with old acquaintances, thoughts of the beautiful "high grade" of the olden golden days strengthened the resolve to not miss a similar opportunity now made possible by the renewed activity in Tin mining. Count em, Boys and Girls, count 'em, the literally "52 varieties" of minerals which Knopf lists as occurring in North Western Seward Peninsula. (2)

About noon of a perfect day we were in the air again over the Spruce and Birch covered hills of the Kuskokwim-Innoko divide and across and along the Willow and Balm of Gilead bordered streams. Somewhere in the head of the Innoko watershed we flew near a bare cone with a base of something more than a half mile and a height above its bordering valleys of less than a thousand feet. Devoid of vegetation but its golden yellow sides indicative of some mineral that had colored its country rock. What a place to try out my Counter! But alack a day. Helicopters are not yet available for charter by a rough-neck prospector!

Unbelievable as it may seem, there is hardly a sizable stream cutting Mesozoic rocks in Alaska that has not been panned for Gold, and well panned by the hardy breed of men who tramped the hills and poled the streams from the early 1890's to World War I.

A quarter-hour or more before reaching Unalakleet our line of flight crossed one maze of interfingering mountain streams which may not have been thoroughly prospected. It was the head waters of Yellow River, a left limit tributary of Anvik River, flowing in turn to the Yukon.

Perfect visibility started day dreams in the minds of more than one old timer as we flew over creek after creek, heading in rounded mountains and flowing down well confined valleys.

Only a few moments at Unalakleet to unload and load mail, and then off for Nome, this time straight across Norton Sound. Fog closed in for a few moments of the half hour or so of flight over the water, but lifted as we came over land a few miles east of Nome. Old Anvil Mountain and the miles of Dredge tailings on the Tundra surely looked good as thoughts of the old days of the storied "Third Beach Line" came crowding in.

We landed on well kept Marks Field to find a small crowd of Nome's top business folk awaiting the arrival of a plane load of Tourists coming via Kotzebue. Our ordinary travellers from Alaskan points had to await the arrival of the Tourists before the bus would leave for Nome a mile or more away. My request that I might get off at the Wallace Hotel was met by the statement of the driver that he was scheduled to make a grand tour of Front Street before stopping anywhere. But Jehu relented and after we had checked through the Guard Post at the entrance to the Military Air Field he stopped for me as requested. Carrying my dunnage unto the crowded foyer, the smiling proprietress informed me that though there was no room available at the moment, that before bed time, a place would be found for me. I almost said night time, but in Nome in July, night time is noted only by its absence.

Day 4. Plane 6 was boarded at noon at the Nome Field for Teller. The flight along the south side of the serrated

Keeglu-wite Range and around its west end to Grantley Harbor and Port Clarence was all that could be wished. C.A.V.U! Teller, on the mile long gravel spit that separates the two bodies of water mentioned, was once an important point of transfer of men and material from ocean craft to the gold placers of the Kougarock and the Agiapuk. And now pinning its faith on Tin.

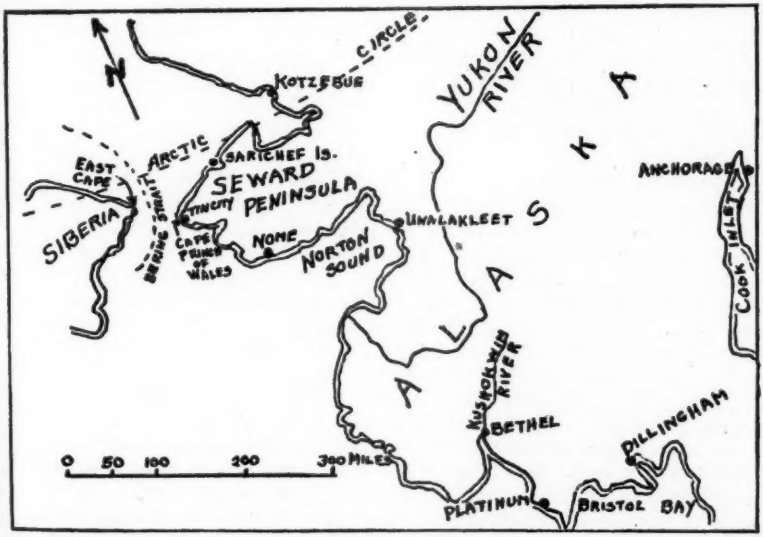
Dinner with old friends, then a wait of several hours for Plane 7 and off for Lost River. Here a truck bumped us across a rocky valley and up Cassiterite Creek to the Camp of the United States Tin Corporation. Their placer operations were well under way, and preparations being busily made for extensive Lode mining and milling, Owner McIntosh and Superintendent Sorenson, notwithstanding an over burdened Commissary and crowded quarters, showed true Alaskan hospitality. The next day and a half were spent collecting along a hill side that was outstandingly fertile of mineral.

Mr. B. W. Wilson of the U. S. Geological Survey was most helpful in identification of specimens, and generous in many ways. Some "Orbules" which he had back packed from Tin Creek, miles away were particularly appreciated.

Day 7. At noon took plane 8 for the Camp of the Northern Tin Company at Buck Creek. There the Ramstead Brothers of that Company were equally hospitable and helpful. These two young men, raised in the gold placer camps of Alaska, can and do make bulldozers, draglines and welding plants come alive. Here in the wilderness they have cut an outmoded dredge in two, lengthened it, put in a new and efficient recovery plant and are successfully handling a large yardage of gravel and bedrock and recovering values of both Tin and Gold.

Day 8. A trip on Shanks mares up Potato Mountain and inspection of trenches made some years ago by the U. S. Geological Survey. Nice Tourmaline and Fluorite. No Cassiterite seen. Hunks of spongy indurated shiny black and brown Limonite that were regular bird's nests of fibers and needles.

Day 9. A walk down Buck Creek to scan and scrape the tailings piles of an ancient dredge, with the Hurricane Deck and Pilot house and general build of an early day Mississippi River Steamboat.



Part of Western Alaska showing some areas visited by the author.

Now for all time, with "her nozzle agin the bank" her windows and doors open to the Arctic Storms, a play ground for Foxes and Lemmings and an observation post for Snowy Owls.

Day 10. With both ears peeled for the hum of a coming plane, looked at the "wash" in a tributary of Buck Creek below the old dredge, then back towards camp along the mountainside. The plane (number 9) came before I got to camp. But my things had been put in a company truck as I left camp in the morning, and as soon as the plane was heard I hot-footed it for the field near the old dredge, confident that one of the Ramstead boys would have my stuff there.

We flew past Potato Mountain to a landing on the beach in front of the Village of Wales. While in the air, again with ceiling and visibility unlimited, we saw out in Bering Strait Little Diomede Island and across the International Date Line, Big Diomede and East Cape on both of which flies the flag of Soviet Russia.

Sobering thoughts indeed as we saw how very near the headland of Mys Deshneva and the reported air field of Uelen are to our own beloved and peace desiring country.

The stay at Wales was all too short, till we must needs board the Mail Plane (10) for our destination, Shishmaref. En-route a splendid view of Ear Mountain, aloof and alone, whose known outcrops and float of Cassiterite may yet merit development.

As we neared our desired village we were enveloped in fog. With no G.C.A. or I.L.S. to bring us down safely to the unseen beach; with almost idling engine; in great sweeping circles we spiraled slowly downward. This lone passenger was far from happy, peering out into the pea soup. Did the murk go clear to the ground? Then, a slight thinning of the vapor, then just wisps scooting by the window, and suddenly, the beach, the surf of the Arctic Ocean, and the long line of dwellings, stores and a church that is Shishmaref.

What men our Bush Pilots are! What co-ordination and sang froid! And what gratitude is often due our Heavenly Father.

My old friends Mr. and Mrs. George R. Goshaw, gave me a real welcome.

Followed nearly a week of old time Alaskan hospitality in the setting of a modern home. The days of collecting along the beach, the evenings of cheer and reminiscence! And what a pleasure it was to study and admire the remarkable display of Eskimo artifacts. Nearly all of them dug from middens by enthusiastic and informed Mrs. Goshaw.

Sand Calcite Crystals on Sarichef Island, Alaska

The thrill of the trip came, when it was found that after heavy storms the beach produces, sparingly, some unique crystallized aggregates. The exact nature of these was not known. Some of them are of such beauty of form and color as to grace any collection of Minerals. They range in color from that of canned milk, through yellow and browns to a deep black.

Samples of the aggregates were sent to John S. Albanese, the well known dealer of Newark, N. J., who in turn had them examined by Dr. F. H. Pough of the American Museum of Natural History. Here is Dr. Pough's report:

"I checked the nodules, they are sand calcites. I wouldn't be at all surprised if they were not forming in place in the beach now. Possibly the low temperatures have something to do with. The occurrence might be worth writing up for ROCKS AND MINERALS. The mud may be volcanic ash, rather than sand. Its color and texture aren't quite sand like."

The village of Shishmaref is situated on Sarichef Island and this is one of a number of low lying, narrow sand islands which occur all the way from a short distance northeast of Cape Prince of Wales for 120 miles or more towards Cape Espenberg. Sarichef stretches across the mouth of Shishmaref Inlet. This inlet has several connections with the Arctic Ocean, all narrow.

The island averages more than a half-mile across and several miles in length. Its seaward edge is marked by a scarp

of sand several feet above high tide. The top of the scarp is held together by a mass of roots of the Beach Rye, Beach Pea, and other flowering plants. Dunes occur intermittently along the crest of the island, and sometimes near the sea. Ponds of both fresh and brackish water occur.

The village of Shishmaref, straggling along the island's crest, may boast of an Alaska native service school, a Lutheran Church, a post office, two stores, and the home of Mr. and Mrs. George R. Goshaw, host and hostess par excellence of the Arctic.

For many years Shishmaref was also the home of George Aghupuk, a noted Eskimo artist. Fame and fortune has taken the latter to Anchorage and Stateside where he has been honored as a member of American Artists Society.

The island was named by the Russians in honor of one of the officers of one of their early day exploration expeditions.

No evidence was seen along the local littoral of any consolidated rock which might have been the matrix of these crystals. It is assumed that they formed in a permeable layer of sand, or possibly volcanic ash, which "outcrops" under the sea, but close enough to the shore line to be eroded by the surf and undertow.

The local Eskimo know these striking growths as "Kool-koot" (in the plural) and their tradition says that they come from the carcases of Polar Bears that have died of old age and found a resting place in what we more erudite (?) whites call Davy Jones' locker. The Mammoth Ivory found near Shishmaref has an unusual range of color. No doubt due to the mineral salts in the silts and soils where the tusks and molars long lay buried. This Ivory is carved, etched and polished artistically by several of the local Eskimo.

Plane number 11 landed this still specimen hungry traveller at Nome. A wire received there from Dillingham forced the abandonment of a planned trip to the Bismuth mine of O. A. Margraf on the Sinrock River. Perhaps 1952 will permit another trip to the hillsides and old cuts of the Tin Country and, it is hoped, to the fascinating beach at Shishmaref.

Among the minerals secured in 1951 were intergrowths of Tourmaline and Grossularite, radiating crystals of green, blue and brown Tourmaline, small crystals of Lode Cassiterite; Wolframite, Zinnwaldite and Bismuthinite. None of these in quantity to advertise for sale. But yours truly does hope to one day join the useful fraternity of dealers.

The readers of ROCKS AND MINERALS who have access to large libraries will find time well spent in reading all of "The Geology of the Tin Deposits of Seward Peninsula," Bulletin 538 of the U. S. Geological Survey, and in particular what the Author, A. Knopf, has to say and picture about "Orbules."

Those striking whorls of fluorite, hornblende, vesuvianite, plagioclase, magnetite and what have you.

Of these sui generis growths it is assumed that magmas first built a mass of diverse minerals, perhaps in some "dark unfathomed cave" of Mother Earth. Cosmic forces brought it to the surface, then light and oxygen and frost and time etched it for our wonder and admiration.

Adios and "good digging."

References

1. Bulletin 538, U. S. Geological Survey, Page 7.

2. Bulletin 538, U. S. Geological Survey, Page 16 et seq.

Needs Back Numbers Of American Mineralogist!

Editor R. & M.:

I am missing several back issues of the AMERICAN MINERALOGIST as follows: Vol. 27 (1942) #1, 2; Vol. 28 (1943) #3. I have a number of back issues of ROCKS AND MINERALS, some of which I would be willing to exchange for the copies of the AMERICAN MINERALOGIST that I am lacking.

Arthur J. Boucot
Room 334, U. S.
National Museum
Washington, D. C.

June 15, 1952

TWO LOCALITIES OF ALPINE COUNTY, CALIFORNIA

By MERRITT HERRING
337 Colusa Avenue, Berkeley, California

Introduction

In the country's forty-eight states there are many localities that have for years delighted their visitors by rewarding them with beautiful specimens. Both lapidary enthusiasts and mineral collectors have found a plentifulness of material. As a result of the increasing number of enthusiasts visiting well-known localities, the specimens are becoming increasingly harder to obtain. Some localities which at one time had an abundance of material, have now become nearly exhausted and only a few desirable specimens are to be found. It is apparent that in the not too distant future, specimens from the most noted localities will become rare and expensive. This is a very serious situation, which could prove fatal to the growth of a rapidly growing hobby.

After experiencing the disappointment of one of these exhausted localities, I began to inquire about lesser sites where there might be a chance of aquiring something. I learned from the late Phillip Bolander of Oakland, California, that there is a locality, which is little known, about 150 miles distant. From this locality I obtained some interesting lapidary items as well as very nice mineral specimens . . . . . which I consider among my best.

The startling fact is, that mineral collectors who lived only 40 miles from this locality knew nothing about its existence. I began to wonder how many other potential localities like this there are. After some investigation, I learned that there are countless numbers, many of which are well worth while.

There are numerous ways of obtaining leads to new deposits. In my experience I have found that the data found in the State Mineralogical Report is most helpful. Many times traces of finely crystallized minerals have been found in quarries, mines, and other excavations. The reports usually carry mention of these finds.

Probably the most productive is the mine dump because of the source of the dumpings. Many times minerals are found in ore bodies, and since they are not fit for commercial acknowledgement, they are cast aside.

Merritt Herring

Another effective method of gathering information is from rumor and hear-say. Although not altogether reliable, it is sometimes very effective. Many times a lapidary minded collector stumbles upon a site where mineral specimens are found, and because of his lack of interest, he may fail to report his find. This may happen the other way around . . . . as when a gem locality is overlooked. The more I inquire the more amazed I become at the number of these unreported sites.

The third method is purely exploration on the part of the collector, where the only clue is a likely looking spot. Of all the methods named, none gives the thrill of success as does this one. All that is needed is a small clue or some sign of the presence of something interesting. If while on a trip a person would stop and examine some of the material lying by the side of the road, or ex-

amine a road cut, there would always be the chance of finding the needed clue.

The localities mentioned in the following pages have been found by a combination of these methods and I sincerely believe they offer adequate proof of their effectiveness.

Minerals of Alpine County Markleeville Area

Alpine County is situated directly south of Lake Tahoe in Northern California on the California-Nevada State line. In its 800 square miles there are only three highways traversing its mountainous terrain, with few smaller roads which are passable. Owing to its location in the heart of the Sierra Nevada mountains, its mean elevation is nearly 8,000 feet.

The Western half of the county is entirely granite of the Sierra Nevada Batholith, with Jurassic intrusives which are strongly fissured and jointed. The rocks of this area show ample evidence of the numerous glaciers that occupied the present drainage system.

The eastern half of the county is on the whole Tertiary Volcanics, essentially andesite. These rocks have extended over into Nevada and a few outcroppings have been noted in the western half. A few small outcrops of Pre-Cretaceous Metamorphics, slates, schists, limestone, greenstone, and conglomerates are widely scattered throughout the county. These are found embedded in granite and granodiorite.

The only mining that has been attempted has been in an area southeast of Markleeville. Here the volcanics have silicified, resulting in the depositing of silver sulphides, which were discovered in the early 1860's.

Upon the first discovery of silver at Silver Mountain in 1861, and the Morning Star Mine in 1863, there were two towns born . . . . Monitor and Markleeville, Monitor no longer is considered a town, and only two hotels still remain; however, Markleeville has lived on to become the county seat.

In 1863 the first stamping mill was constructed in Markleeville. It had ten stamps, and crushed one thousand tons of ore from I X L Mine at Silver Mountain. Mining at this time was flourishing, but it was soon found that the ore which was being extracted needed a special treatment . . . . at that time too costly to obtain. This, together with the lowering of the value of silver, combined to cause the death of what might have been a great mining district.

Now that the price of silver is back up again, and facilities for treating the ore are now available, some activity is being carried on. Most of the activity consists of the cleaning out of adits, shafts, and tunnels.

The two main mines for collecting are the Morning Star Mine, and the Leviathan Sulphur Mine. At the Leviathan Mine are found an abundance of fine sulfate minerals which, if treated properly, make beautiful cabinet specimens. At the Morning Star Mine, there are found a host of sulfides, a few of which are comparitively rare. These two mines are only five miles apart; consequently, collecting can be done at both mines without involved travel.

The Morning Star Mine is reached by driving one mile south of Markleeville to intersection marked "The Loope." Turn left on the dirt road; continue for approximately two miles to the mine site. The quartz veins which run through the large boulders contain the minerals, and heavy tools are needed to secure the best material.

This mine is well known for the presence of both enargite ($3Cu_2S.As_2S_5$) and famatinite ($3Cu_2S.Sb_2S_5$), the latter of which is formed by the partial replacement of antimony after the arsenic in enargite. Some trouble may be had in distinguishing the difference between these two minerals, for X-ray study shows they have identical structure. The only difference between them is that the famatinite is slightly harder and has a higher specific gravity. There are also many other minerals found associated with the enargite including, barite (which occurs as a minor gangue mineral), tetrahedrite, pyrite, stephanite, polybasite, and others. There are also reports of finding octahedral

pyrite.

Around the hill from the main mine is the "old" Morning Star Mine. Here are to be found a good many types of sulfides, including arsenopyrite. A lot of exploration is to be done here, for little is known about what is to be found on the dumps.

Five miles beyond the Morning Star Mine is the Leviathan Sulfur Mine, which holds one of the largest sulfur deposits in the country. There is continuous chemical action going on at all times, with compounds continually being formed and decomposed. Great care is to be taken with these specimens since exposure to sunlight or excess moisture will tend to decompose them.

Below are listed some of the minerals found lining the sides of the abandoned tunnels:

Chalcanthite ($CuSO_4.5H_2O$) is found in azure blue stalactites up to fifteen inches in length. It has also been found in triclinic crystals.

Halotrichite ($FeSO_4.Al_2(SO_4)_3.22H_2O$) is found in long fibrous masses in the lower tunnels. Some of the fibers measure as long as six inches in length.

Romerite ($FeSO_4.Fe_2(SO_4)_3.14H_2O$) is found in chestnut-brown tabular crystals. Owing to its rareness, it will add a great deal of value to a collection.

Melanterite ($FeSO_4.7H_2O$) is found at the entrance to the tunnel in stalactites and crusts of white, green, and when exposed, yellow.

There are probably many others, but distinguishing between some, involves extensive study and delicate apparatus.

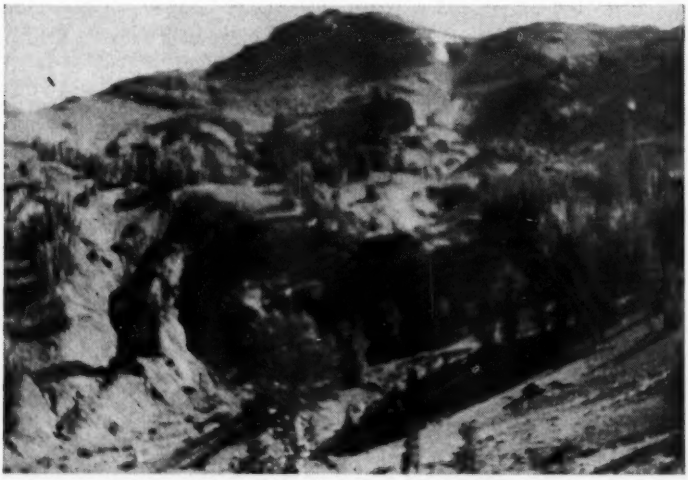
When light is cast on these crystal lined tunnels, myriad colors portray a hidden world of beauty.

Sonora Pass

Sonora Pass is situated about fifty miles beyond the town of Sonora on Highway 108. The elevation at the road summit is 9,624 feet with higher peaks surrounding on all sides. This locality offers scenery equally as beautiful as the specimens that are found there. As I mentioned in the introduction, this locality was brought to my attention by the late Phillip Bolander of Oakland, California, who had done a great deal of exploration there.

This area is part of an extensive rhyolite flow. Chalcedony nodules, jasper, calcite, and a few zeolites, are found within one and a half miles from the road.

The only fault I find with this locality is the limited time it is open. Due to



View to the west from the summit. Nodules are found by snow pack.

the annual snow fall which persists the greater part of the year, the road isn't passable during the late fall, winter, or early spring. The snow clearance beginning in late June and continuing till late August make a comparitively short exploration period; however the almost frigid nights and just pleasantly warm days offer an invigorating change from the far west's valley heat. September snow does not always fall, but the air hints of snow as it does in the month of June-therefore, July and August are the most favorable months. Water furnished by melting snow banks is always plentiful and refreshing.

The hiking involved in acquiring this material may prove tiring to those unaccustomed to higher altitudes plus a comparitively rugged terrain; however some material is found fairly near the road and involves no great amount of climbing, but for the most part—a stiff long climb is ahead for those who desire the better material.

The equipment necessary to secure the most desirable specimens is a fairly heavy hammer and a large chisel. A sledge hammer is ideal but because of its weight, it is usually left by the wayside.

On the whole the rhyolite is weathered sufficiently to make for easy digging, but that which is highly silicified (containing the agate nodules) is sometimes hard to work. A great deal of care should be taken in extracting the geodes, especially the calcite, for they often break from blows administered to the surrounding rock.

The calcite specimens are found about two miles from the road. A good many have weathered out, most of which are of little good because of the disfiguring caused by this weathering. The best specimens are found in the ridges near the top of the mountain. Here they are plentiful and dug out with little effort. Extreme care is to be taken in working this rock, as loose sections are apt to break off from heavy blows. Some of the geodes measure up to seven inches in diameter, and are lined with many different forms of crystals. The most common forms found are the simple rhombohedron, and some been found lined with basal plates, hexagonal forms, scalenohedrons, and many others. In some instances quartz has been deposited after the calcite, representing itself in the form of doubly terminated crystals on the faces of the calcite. There seems to be little or no agate associated with this particular deposit of calcite, but in one deposit both calcite and agate have

View of White Mountains to the East.

been deposited together ——— the calcite first, the agate after.

In some of the agate nodules there are crystals of unreplaced scalenohedrons of calcite. Although they are small they make very nice mineral mounts when surrounded by clear chalcedony. On the examination of one radiating group, it was found that crystals were definitely orthorombic, probably natrolite.

Very unusual forms of chalcedony have been found in quartz geodes, chalcedony in the form of small cones being of particular interest. Some of these cones have been broken on the end ——— exposing holes which run up their centers. On examining these holes it was found that they were casts of crystals that had been removed by ground acids. Chalcedony has evidently been deposited over these crystals in stalactitic fashion. These casts have not yet been identified: however, it is known that these crystals were of radiating nature, for radiating groups of cones have been found.

The Jasper is widely spread and of several varieties. The most suitable for lapidary purposes is the jasp-agate, which cuts into choice cabochons. Some of the jasp-agate is found in nodules where it forms beautiful lace-work of reds and yellows in blue toned agate. Another variety occurs with flower-like patterns. This is apt to under cut, but with proper grinding a worthwhile stone can be cut.

Amethyst geodes, as well as amethystine and iris agates, have been found here. Even native copper has been found in minute stringers running through quartz crystals.

These localities lie south west of the road summit on Sonora Pass. Detailed directions are impossible; however, I have included several pictures which may aid the collector in orientating himself to the general contour of the locality.

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Minerals of California

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Looking at the road from the jasper locality. The X (lower left) marks the summit at the road.

THE CLAYSTONE CONCRETIONS OF THE SAULT STE. MARIE, MICHIGAN, AREA

By JOSEPH A. MANDARINO
1034 North Keystone Avenue, Chicago 51, Illinois

Introduction

Claystone concretions are intricately shaped objects composed primarily of calcium carbonate and clay minerals. They are found in clay beds of Quarternary or Recent age. Since such clay beds exist throughout the world, numerous claystone localities are known. After studying claystones from some of these localities, various writers have formulated theories as to the origin of claystones. One of the purposes of this paper is to present a compilation of these theories.

However, the main purpose of this paper is to furnish data on the claystones from the Sault Ste. Marie, Michigan, area. As far as the writer has been able to learn, the claystones from this locality have never been described in geologic literature.

During the first nine months of 1947, the writer was a student at the Sault Ste. Marie Branch of the Michigan College of Mining and Technology. In the spring and summer months of that year, he found several localities at which claystones occurred. A large suite of specimens was collected in the hope that a study could be made of these claystones at a later date. This paper is the result of this study.

Towards the end of this study of the "Soo" claystones, several other localities were brought to the attention of the writer. Although the specimens from these subsequent localities were not studied with as much detail as those from the "Soo" locality, a few notes pertinent to these localities have been added to this paper.

Acknowledgments

Thanks are due to Miss Alice Clapp, librarian at the Carnegie Public Library in Sault Ste. Marie, Michigan, who gave the writer information which led to the discovery of one of the localities. The writer also wishes to thank Messrs. Chester P. Wolski, A. J. Kamm, F. C. Archer, and Leonard F. Wood who aided in collecting many of the specimens used in this study. Also to be thanked is Mr. Kenneth Hatfield who took the photograph used in this paper. The writer also wishes to acknowledge the aid given him by the following members of the faculty of the Michigan College of Mining and Technology: Dr. Roy W. Drier, Professor Reynolds M. Denning, Professor Bartholow Park, and Mr. Theodore Pearce. To Mr. C. Fritts, who presented the writer with a large suite of specimens from the Steep Rock Lake locality, the writer is grateful. Mr. Kenneth Hatfield supplied specimens and information from the Agate Harbor locality. Lastly, the writer gives his thanks to Dr. Ralph E. Grim and Mr. Herbert D. Glass, of the Illinois State Geological Survey, for conducting a differential thermal analysis of a claystone sample from the Sault Ste. Marie locality.

Part 1. The Theoretical Origin of Claystones

As has been stated earlier in this paper, numerous theories have been formulated at various times to account for the origin of claystones. Some of these theories were formulated only after their authors had done considerable work in the laboratory and in the field. Others, more philosophical in nature, were conceived after careful consideration of the laws of science. Still others seem to have stemmed from highly imaginative minds.

Solution-Precipitation Theory

The first theory to consider is concerned essentially with solution, concentration, and precipitation; therefore, the writer proposes the name "Solution-Precipitation Theory." Gratacap (6) prepared a theory which falls into this category, as did Nichols (10).

Gratacap's theory is as follows: In the original clay beds were irregular spots or separations between layers where moisture remained. This condition resulted in keeping the clay at these spots in a plastic state. Migrating ground water

carried calcium carbonate in solution to these spots. This carbonate solution was concentrated by the addition of more carbonate or by the contraction of the "magma." Upon concentration, the calcium carbonate crystallized and each grain thus produced acted as a seed crystal upon which more calcium carbonate crystallized, and in so doing drew clay particles into the mass. He believes that the shape of the concretion is *dependent* on the shape of the original cavity or space; and further, on the amount of carbonate available at various points in this space. He states that "The growth may have been quite gradual or quite rapid." Later in the article, while discussing the inclusion of sand in the calcite of the concretions occurring in the Fontainebleau limestone and the absence of included clav in the calcium carbonate of claystones, he says, ". . . . in the latter [referring to claystones] the calcite formed more or less slowly." Gratacap did some laboratory work on claystones, and in his thin section work he found no linear arrangement of calcite crystals. He reported, however, that the clay appeared as spots and lines giving a net-like appearance.

Nichols' theory, although generally similar to Gratacap's, differed in a few points. He does not seem to consider the original shape of the cavity as having any effect on the subsequent shape of the claystone. In his own words, ". . . the concretion shapes itself solely in accord with the amount of material brought to it from different directions." In addition to his theory on the origin of claystones, Nichols also presents some information on the origin of the calcium carbonate in the claystones. The clays are sedimintary deposits of glacial origin formed in quiet water. The calcium carbonate may have been derived from comminuted limestone or vein calcite, small molluscan and protozoan shells, powdered glacial fragments of land and water shells, and/or lime-bearing minerals such as the more calcic members of the plagioclase feldspars. Gratacap mentions only water as a solvent, whereas Nicho's attributes solution to ground water containing both carbonic and humus acids.

Mechanical Theory

The Mechanical Theory was voiced by Gardner (4) in 1908 and was supported by Patton (11) in 1922. Gardner made a study of concretionary growth in alluvial beds of Present Age in the Rio Chaco region of the San Juan Basin, New Mexico, and came to the conclusion that many aluminous concretions in clays and shales ". . . are contemporaneous with the strata in which they are contained." He believes that *the particular concretions which he studied* ". . . have resulted through adhesion of particles in overloaded water volumes distributed by currents." Thus, the action involved in his theory is mechanical in nature, and consists primarily of rolling. Gardner states that although he found some concretions with nuclei, they definitely were not common. Some of the examined concretions, however, showed concentric shells of larger particles.

As evidence to the validity of his theory, Gardner mentions that Mr. Frank L. Hess and Mr. H. S. Gale observed the same phenomenon in two different localities. Mr. Hess found "mud" concretions forming along the Cuyama River and at other localities in California, while Mr. Gale noted this process along a small tributary to the White River, near Meeker, Colorado. Patton, in his paper, states that he witnessed the same process at the North Fork of the Red River, Beckham County, Oklahoma. He adds that the concretions were in the form of balls and cylinders, the former being the more common type. He states that the cylinders were probably formed by two balls adhering, and the rest of the concretion was completed by further rolling. He reports that many specimens exhibiting successive steps of this process were found.

This theory is interesting in that it attributes the formations of claystones to syngenetic processes, and not to epigenetic processes as do most of the other theories. However, this theory seems valid only for spherical, semi-spherical, and cylindrical forms of claystones, as the

production of the more intricately-shaped claystones cannot be explained by such a theory.

Animal Theories

Of the several theories pertaining to animal origin, two distinct types can be recognized: (a) those in which animals are a direct cause, and (b) those in which animals are an indirect cause. The theories falling into this last category are the more feasible of the two, but both types are worthly of mention.

Directly Caused by Animals. Many laymen, upon seeing a claystone, venture the opinion that they are "fossils of some sort." This same opinion has been voiced by various early writers. Mr. Parrot, according to Gratacap, studied the "Stones of Imatra" and came to the conclusion that these claystones were the petrified remains of animals such as Medusae.

Hitchcock (8) reports that Swedish workers believed that the claystones from Nykoping, Sweden, were some sort of fossil mollusca.

Indirectly Caused by Animals. James D. Dana (3) observes that some claystones assume long cylindrical forms. He believes these forms have been produced by "consolidation around a hole bored by a worm or mollusk, the hole giving passage to the concreting ingredient."

A popular belief which attributes the origin of claystones indirectly to animals is here termed the "Artifact Theory." This theory, in which claystones are considered to be articles of human manufacture, is mentioned by Geikie (5). Hitchcock received a claystone the size and shape of a large coin from an English colleague. The specimen was labeled: "Kimmeridge Coal Money, (use and age unknown) found abundantly in the Kimmeridge Clay, Dorset Coast. Supposed [ly] turned in a lathe and anciently used as money." The writer wishes to emphasize that the "Artifact Theory" mentioned by Geikie and Hitchcock was not formulated by either of them, but appeared in their books merely as an example of some of the popular beliefs regarding claystones.

Vegetable Theory

Another part of Dana's theory, mentioned previously, pertains to a botanical origin. He states that cylindrical claystones could also ". . . derive their form from some rootlet or stem of a plant, in which case they are often branched."

Geikie, while discussing loess deposits, mentions that the roots which burrow through such deposits are encrusted with carbonate of lime.

Gratacap, in his paper, mentions numerous theories formulated by earlier writers. One of these theories regards claystones as "fossil toadstools."

Miscellaneous Theories

Under this category fall such theories as the stalactitic theory which explains claystones by infiltration; the gyration theory which Gratacap mentions only as being inadmissable; and the electric theory of Dr. Fitton which Gratacap quotes as follows: ". . . perhaps it may be supposed that electricity is the cause which sets free the elements and disposes them anew."

Hitchcock's Theory of Directional Disturbances

Hitchcock studied numerous claystones from the clay beds of Massachusetts, and came to some very interesting conclusions. He states that throughout the State of Massachusetts six forms or shapes of claystones predominate. They are: the sphere, the oblate spheroid, the prolate spheroid, the annulated type, the lenticular type, and the cylindrical type. He has assumed that all these types, if allowed to form without hindrance, would tend to be spheres. However, if the overlying strata exert enough pressure on these spheres, they will flatten out and become the oblate spheroid type. Likewise, each of the other forms can be attributed to pressures and movements in various directions. As further evidence of this theory, he states that in some cases different localities show only one of these six predominant forms. Thus, in these localities, this one form may have been formed by a constant movement of ground water in certain directions. In this respect, this theory is

related to the theories of Gratacap and Nichols.

Part II. The Claystone Concretions of The Sault Ste. Marie, Michigan Area.

Description

The claystones of the "Soo" area are extremely variable in appearance. They range in size from one-fourth inch long to seven inches long. The predominant color of the claystones is buff, sometimes grading into pink or dark brown. Many forms can be found, ranging from simple spheres to complicated aggregates of various types. To describe the countless number of forms which the concretions assume would require several thousand words. Therefore, the writer has deemed it advisable to condense such a description into one photograph as seen in Plate 1.

Laboratory Investigations

The writer reviewed most of the known literature on claystones, and almost every one stated that claystones were composed of clay and calcium carbonate. This information left two questions in the writer's mind: (a) what minerals constitute the clay, and (b) what form of calcium carbonate is present? In order to determine the answers to these questions, the writer resorted to the following types of analyses: X-ray diffraction, spectrographic, and petrographic. In addition to these three methods, a differential thermal analysis of a claystone sample was obtained through the courtesy by Dr. Ralph E. Grim and Mr. Herbert D. Glass, both of the Illinois State Geological Survey Division. The results of the aforementioned analyses constitute most of the remainder of this paper.

Spectrographic Analysis. Unfortunately, a quantitative analysis could not be made because of the writer's lack of experience. However, through the courtesy of Professor Bartholow Park, the writer was able to obtain a fairly complete qualitative spectrographic analysis. The following elements were found to be present in the "Soo" claystones: aluminum, calcium, iron, magnesium, manganese, sodium, phosphorus, potassium, and silicon. Previous wet analyses proved that while most of the iron was present in the ferrous form, some of it was definitely ferric.

Petrographtic Analysis. Powder from a claystone was viewed through a petrographic microscope with, unfortunately, little reward. Calcite could be identified readily, but the other minerals were so small in size that they could be seen only as an aggregate and not as individual grains.

X-Ray Diffraction. The writer took numerous diffraction patterns of the "Soo" claystones. Patterns were taken of both leached and unleached samples. Dr. Roy Drier was particularly helpful in this phase of the investigation. The following minerals were identified: calcite, dolomite, kaolin, illite, and apatite.

Differential Thermal Analysis. This analysis was performed by Mr. Herbert D. Glass through the courtesy of Dr. Ralph E. Grim, both of the Illinois State Geological Survey Division. Mr. Glass stated, "The leached sample indicates an illite type of clay mineral with quartz as the only impurity which can be observed by means of thermal analysis. There is no positive evidence for the presence of kaolinite although small amounts, if present, could be identified by means of X-ray diffraction."

Localities

As was mentioned in the first part of this paper, the writer found several claystone localities during his stay at the "Soo." Most of the visitors to the "Soo" usually stay there only long enough to view the Locks, so for this reason only the two most accessible localities are described in this section. Fortunately, these two localities are the best the writer found. Undoubtedly, there are better localities in the area, but since the writer was a pedestrian, he was restricted to the city of Sault Ste. Marie and its immediate vicinity. It is hoped that future collectors in the region will be able to search a little farther from the city, and possibly add a few more localities to the list. Places which may yield something are: (a) The road cuts between the "Soo"

and Neebish Island; (b) The clayey patches on Sugar Island; and (c) Almost any place where the soil is quite clayey.

The Locks Locality. This locality has yielded the best and most intricately shaped specimens by far. This is probably the most convenient locality for collectors with only a small amount of time, as they can combine collecting and sightseeing at the same time. The claystones are found on the narrow strip of land north of the American Locks. They are quite widespread, although the best spot is on the eastern end of this area. Unfortunately, because of the present (September 1951) World conditions, collectors may be restricted from this locality.

The "Hills" Locality. This locality was formerly used by the U. S. Government as an ammunition dump. At the time of the writer's stay in the "Soo," the area was owned by the city. If the national government has taken possession again, collectors will probably be restricted. The locality is shown on the accompanying map. It is in the southwestern portion of the city.

Several log bunkers are situated along the dirt road which runs through the area. The clayey soil of the area was used to fill the spaces between the logs and an occasional concretion may be found by examining the bunkers. However, it is best to proceed on past these bunkers to the place from which the soil was taken. Here the collector will find concretions galore. The best places to look for them are in the small gullies where they have been exposed by erosion. A little digging at this locality may prove worthwhile. The claystones from this locality are not as complicated in form as those from the Locks, but they are much larger.

Part III. Other Claystone Localities

Claystones from the following localities were not studied in detail as were those from the "Soo." The only laboratory investigation of these claystones consisted of a spectrographic analysis. The results were the same as for the "Soo" claystones.

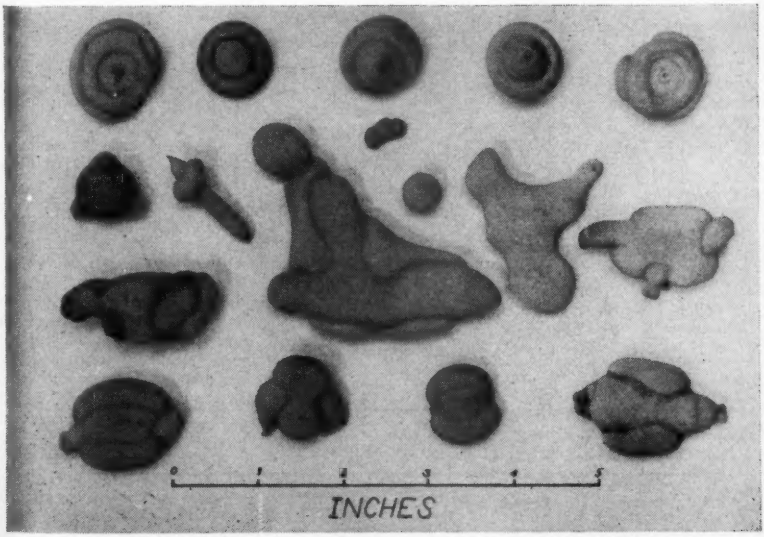


Plate 1: Photograph illustrating size and shapes of claystone concretions from Sault Ste. Marie, Michigan.

Agate Harbor, Michigan

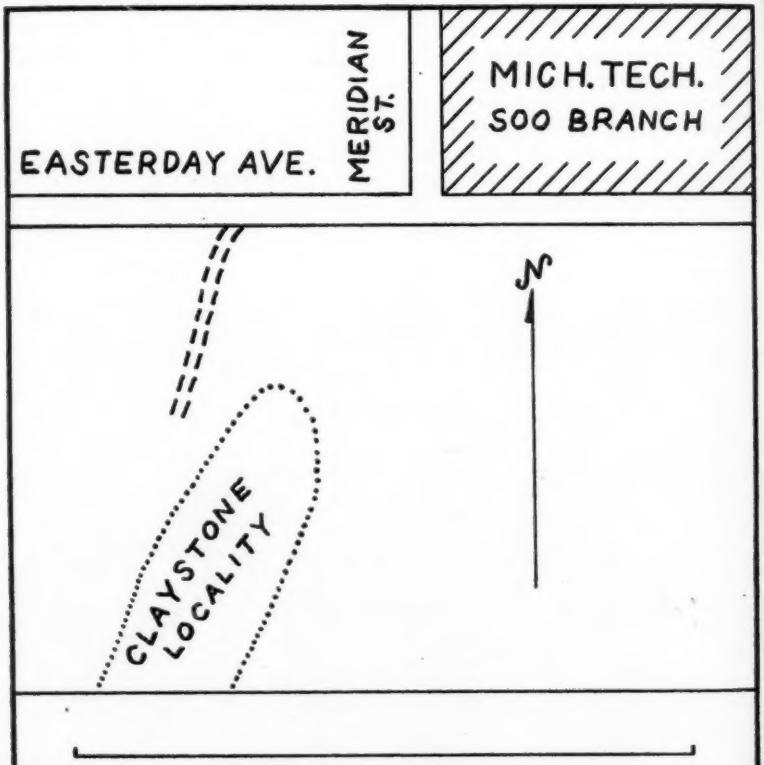
This locality was discovered by Mr. Kenneth Hatfield who sent the writer several specimens from the locality. The writer visited the locality in the fall of 1950 with Mr. Manfred Froehlich, but was unable to find any concretions. The writer does not advise visiting the locality as it does not seem too productive. The collector in this area would do better to collect the many minerals which abound in the Copper Country.

The Iron River, Michigan

This locality should not be confused with the city of Iron River. The concretions occur in the banks of the Iron River, near Silver City, Michigan. The locality is several miles up the river from Lake Superior. The claystones were found by the writer while he was assisting Mr. Peter Van Altena in conducting a field study of the geologic features of the area.

The Steep Rock Lake Locality

The claystones from this locality were found by Mr. C. E. Fritts at Falls Bay at the eastern arm of Steep Rock Lake, Ontario, Canada. Most of the specimens are discs or aggregates of discs, although a few cylindrical types are present. Some have formed directly on the bed rock of the region.



Map showing the "Hills" locality in the southwestern part of the city of Sault Ste. Marie, Michigan.

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Paleontological Research Laboratories

It is a great pleasure in advising ROCKS AND MINERALS of the official opening of the Paleontological Research Laboratories, in Statesville, North Carolina.

The Institute, one of several similar Institutes operating under appropriations from private geophysical exploration companies, will specialize in paleontological and stratigraphical studies of the Caribbean and Latin American areas.

It will be the main function of this Institute and its staff to bring into its keeping, through field parties, and other interested petroleum geologist, such fossil faunas from the above areas, as may be collected and to be studied here, remaining here in this Institute, as being the major repository for such Carribbean and Latin American fossil collections as found and published by us. Aside from the normal paleontologic studies, such collections will also be used in part, for spectrochemical analysis to determine more precise geologic ages, water temperatures and salinity.

For the past six months, members of our staff have been engaged in preparing for subsequent field work, acquiring a suitable reference library, and comparison collections of North American and European invertebrate fossils, both through exchanges and field collecting.

We would appreciate such mention of this Institute and its projects, as outlined, as you may care to include in a forthcoming issue of ROCKS AND MINERALS.

Richard L. Casanova, D. Sc.
Director

Aug. 22, 1952

Is Not A Dealer!

Editor R. & M.:

In your very excellent coverage of the Canon City Show of the American and Rocky Mountain Federations, there is one slight slip which I would like to call to your attention, in a very mild manner if I may.

You have me listed among the *dealers* presenting displays. This is possibly very natural since the display case my topaz collection occupied was located on the main floor of the show. However, the display was there by invitation of Pres. Heinz Eckert of the Rocky Mountain Federation as *strictly a guest display,* the space for which was furnished by the Show.

You will note that I did not enter any gems into the faceting competitions, and no material was offered for sale. I would like to preserve my strict *amateur* status, as I am not a dealer, have nothing for sale, and pursue the avocation of gem faceting only as a hobby. I advertise for gem rarities in which I am interested, on an exchange basis, or cut-and-share basis, but all my advertising states that I am not a dealer and have nothing for sale.

I thoroughly enjoy every issue of ROCKS AND MINERALS and am a cover-to-cover reader. As an editor, the amount of factual detail you carry astounds me—I know how much work it is to gather, edit and proof read so much material.

Hugh Leiper
1700 Rabb Road, Austin, Tex.

Sept. 6, 1952

BEGINNER'S LUCK

By DON ALFREDO (Alfred M. Perkins)
322 Linda Vista, Las Cruces, New Mexico

It seems like double-talk to refer to the mines in the vicinity of my home town, Las Crucas, New Mexico, as 'rich and famous" and to immediately have to add that they are not being operated. Oh yes, some of them are being intermittently operated — by experienced miners who appear to fare rather well — but in comparison to the days near the turn of the century when the community of Organ counted its population in the hundreds rather than, as now, in the dozens, these mines can now be collectively described as "practically idle". The fact of a rich and productive past — a past in which there were found here many excellent mineral specimens including many museum specimens — plus the fact of today's idleness makes the Organ Mining District mine dumps excellent hunting grounds for wishful-thinking rockhounds. Spurred by the hope that what has been found before may be found again and comforted by the knowledge that their activities are unlikely to hinder the operations by which others are earning their livings, many rockhounds have here pursued the elusive choice specimens of wulfenite, cerrusite, smithsonite, and a dozen or more others. To my knowledge the hope has in recent years been unfulfilled. There have been finds that have caused yelps of joy, but comparison of such finds with the gorgeous specimens in the collections of Mrs. Scott or Mr. Bentley — to mention only two— generally reduces such yelps to mere peeps.

I am one of these wishful-thinkers and I here confess that instead of museum specimens in the pounds sizes, my finds have generally been of the thumbnail size or smaller — beautiful under a glass, to be sure, but not eye-catching in size. There have been exceptions — fist-size clumps of wulfenite, good disp'ay accumulations of andradite crystals in matrix, showy chunks of badly weathered chrysocol'a, two micros of gold flecks and lumps in fairlyland vugs of acicular malachite, and of course I have sought and found many choice specimens of the quartz and albite crystals — some of them twinned — for which the blow-hole is noted. But the blow-hole, strictly speaking, is not a mine. To anyone but a mineral collector the sum of the rewards of many trips can hardly be worth the total effort expended. Repeatedly I have been thrilled by what I have brought home, only to have my swelled head suffer a drastic deflation when, sometimes within a matter of days, I receive in trade a specimen from some far-away place— a specimen so far superior to what is available locally that the matter isn't funny. So in recent years I have forced from my mind most of the hope of finding anything startling and have considered my Organ dump-prowls primarily outings. I have been generally content with a "showing" of this or that and such of my finds as I display or trade are offered as being typical of a peetered-out locality—with an apology.

My brother, Frank S. Perkins, of Los Angeles, is a free-lance composer, arranger and conductor. You may have heard of him as the composer of "Cabin In The Cotton", "Stars Fell On Alabama" or other popular numbers or you may have seen his name on the motion picture screen in the introductory portion of a film — the portion which few of us read carefully and which I would not read but for the possibility of finding him mentioned there. Persons in this line of work are not temperamental like opera singers — or at least Frank isn't —but they DO have to take care of their hands. Facility with a music writer's pen isn't improved by bandaged fingers, so prowling about on treacherous rock slopes and pawing about in quartz gravel or handling such puncturers as pectolite, for instance, are activities that do not naturally appeal to music writers, performers on the harp, or those who

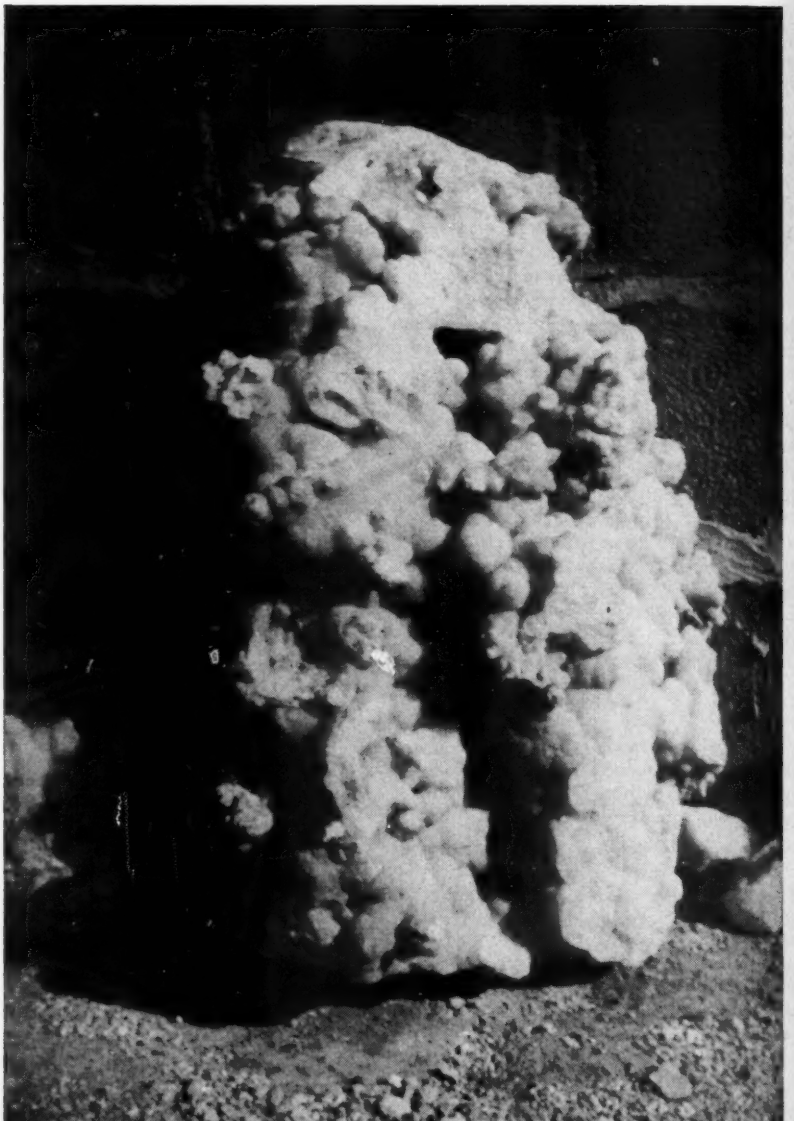
handle corrosive materials without rubber gloves. Furthermore, music writers must stay fairly close to centers of population or starve and they must, if they are closely connected with the motion picture industry, keep in touch with a string of friends identified with that industry, and such friends are likely to be of the cocktail class rather than the lovers-of-the-great-outdoors class. And so, I hardly expected that my brother would ever become a rockhound. I hardly believed he would let himself get near enough to the bug to get bitten. Nevertheless he has been on three rockhounding trips and on each I have been his guide. On their first trip, both he and his wife were severely bitten by the rockhound bug and their temperature charts show a sharply ascending curve which indicates that the disease has them firmly in its grip and they aren't fighting it. They are already at the stage in which they can and do gleefully announce to neophytes who view their modest but growing mineral collection — "Oh NO! That's not a manufactured material! That's a natural fluorite crystal, just as it came from the mine!

On the occasion of Frank's second trip —he and I went alone— time was limited so we traveled only so far as Organ to visit some of the mine dumps. On our way I explained how unlikely we were to find anything startling, outlining to him the situation at Organ as I have done in the first part of this article. This was going to be primarily an outing. We picked up some garnet specimens that might grade "locally good," some of malachite and azurite that were colorful and interesting, plus the usual assortment of "pretty" materials that defy classification. While prowling on one dump we met the current operator of the Stephenson-Bennett Mine and secured his permission to pay a visit to this hallowed ground on which every rockhound should tread at least once. I had hoped this might prove possible and had mentally reserved a few minutes for it, but meeting the operator was a bit of rockhound good fortune.

If I correctly remember the early events of our Stephenson-Bennett visit, we together found a few showings of wulfenite and cerrusite and then we became somewhat separated. Before many minutes I was called to Frank's scene of operations. He wanted to know what "this" might be. Protruding from a low bank of bulldozed gangue was a chunk of what I took to be botryoidal calcite. The exposed portion indicated that whatever it was it was probably too heavy to carry far, so I told Frank to keep picking away at it while I brought up the jeep which, fortunately, I could back right up against the specimen. By the time I got the jeep to the spot, the specimen had been freed. It was approximately twenty inches tall and twelve inches in diameter — roughly the size of a worth-while watermelon. "Well", quoth brother, "What is it?" Since most of my finds prove to be calcite when presented to qualified identifiers, I felt reasonably secure in dubbing it calcite. But I cautioned against being quoted.

It seemed rather unlikely that Frank would want to further burden his already stuffed-to-the-gills car with a big hunk of botryoidal calcite and lug it to California, and I had only vague ideas of possible uses I might put it to, but it was a handsome specimen — as calcite goes — so we heaved it aboard. A bit of probing in the same general location unearthed several smaller pieces of the same material. The same, except that two of them had a greenish tinge — rather uncommon but by no means unknown in calcite. All of the pieces were duly dumped in my patio and the Los Angeles Perkinses' took departure for Los Angeles without even a fragment.

It must have been several days later that it first occurred to me that the stuff might not be calcite after all. That greenish tinge — could indicate the cuprif erous variety of smithsonite? I tried the hydrochloric acid fizz test. It fizzed, so forgetting for the moment that smithsonite might fizz too, I mentally stuck the calcite label onto it a bit more firmly. But the thought—or rather the hope—that it *might* be something else — even



The "Big Chunk" of Smithsonite. Height about 20 inches; diameter about 12 inches. Smaller pieces of the same day's "find" are shown partially on either side.

smithsonite—persisted. It was fast working me up into such a state that I wouldn't trust myself with identification tables or tests anyway, so I chipped off a piece of each of the specimens and sent the fragments off for classification by one who knows his business. Back came the report — prosaic to he who wrote it, but a thrill of a lifetime to me — "all smithsonite!" Well! what tricks life can play! After many, many trips to this mine dump and to ALL of the other dumps of this mine, rewarded only by fragments of smithsonite found at scattered locations and at infrequent intervals, I take my greenhorn brother there and in the proverbial bat of an eyelash he finds a piece a thousand times larger than ALL the pieces I have accumulated over the years put together; a specimen nearly as large as the largest I have ever seen in a museum or elsewhere on public display!

If there is a law which states the quantity of copper a smithsonite specimen must contain to permit it to be dubbed "herrerite" — in other words, how green must it appear to receive this sub-variety classification — I don't know it. It probably isn't important anyway since the more authoritative texts generally ignore it. But I will take the chance and state that some of the smaller chunks, having a pronounced green coloration throughout, may be dubbed "Variety herrerite". So be it. The large chunk is devoid of the greenish tint, so I let it stand classified as "Common" smithsonite. But coming from a locality in which it is described by Northrop in his MINERALS OF NEW MEXICO as "widespread in small amounts" it certainly affords an adequate thrill — green or otherwise — and it is truly a thing of beauty.

Frank's third rockhounding jaunt was with my wife and me when we prowled about in Cahuenga Pass in Griffith Park, Los Angeles, Calif., in search of griffithite. Mr. and Mrs. W. Scott Lewis had both assured us earlier that our chances of finding any were almost nil, but we are, as before stated, wishful thinkers and prone to pursue forlorn hopes. We didn't find any. We didn't even find the basalt in the vugs of which it occurs. But we are still aglow with the thrill of being related to the finder of that fine chunk of smithsonite and of having had something to do with making that find possible — so future disappointments are mitigated. We simply wipe them off the slate and bask in the glory of Frank's previous venture — a venture which has conclusively proved to us that there IS— in rockhounding as well as in other endeavors — such a thing as beginner's luck!

Guide Services Recommended!

Editor R. & M.:

Last week, Thursday, I spent the day with Robert Everett Januzzi, Danbury Mineralogical Museum, 83 Elm St., Danbury, Conn., and we visited Tilly Foster, N. Y., and Roxbury Iron Mines. No guide ever put himself out more for those he guided more than he did. I can recommend his services.

Enclosed find a check for a year's subscription for ROCKS AND MINERALS for a friend. Your magazine makes a nice gift to those developing an interest in the subject.

I found using my business card among collectors embarassing so our artist brought the enclosed to bridge the gap (business card with picture of rockhound in upper right hand corner).

Frank W. Hankins
300 Park Ave.
Collegeville, Penn.

August 3, 19522

Brought Up On Rocks and Minerals

Editor R. & M.:

My son and daughter, ages 15 and 13 years, have been "brought up" on your ROCKS AND MINERALS Magazine and are enthusiastic collectors on our summer trips to far away places-last summer-the Hastings Highlands of Canada, and the country around Ottawa. My son took second place in our South Ohio Science Exhibit at Miami University, Oxford, Ohio, this Spring with over 200 accurately labelled specimens, all of which he had collected and identified himself. Since he writes in an interesting fashion I have tried to persuade him to send you an account of one of our trips but he thinks it might not be good enough to publish.

Pearl Zeek-Minning, M.D.
Box 12
Williamsburg, Ohio

June 7, 1952

THE CYCLE OF IRON AS EXEMPLIFIED IN THE EASTERN COASTAL PLAIN

By HERBERT O. ALBRECHT
Bartol Research Foundation of the Franklin Institute, Swarthmore, Pennsylvania

To those who know it receptively, the Eastern Coastal Plain is not a dreary sand heap and scrub forest, but a region full of beauty and problems of natural history. Drive only five miles into the Jersey Barrens from a main highway on a cloudy day, scraping your fenders on the trees and overlooking a fork or two, discovering eventually that some places still marked on the map aren't even a cabin, running into deep sand and fords, and you can get very satisfactorily lost.

The blank whiteness of the sand, whiter than anything but a coral beach, may puzzle you. No doubt you will see curious tubes and plates and even "rattleboxes" of gravel cemented by limonite. The dark cedar bog water flowing so silently in the forest shadows has a mysterious and vaguely alarming effect. The slime on the bogs looks at first like loose rust instead of a minute plant covering green algae and everything under water. Here and there an iridescent coating on stagnant pools is, in fact, rust. A road or two leading to old forges may be bright red instead of white.

On the open plains you will occasionally see a marl pit with dull green, brown and black colors in dramatic contrast to the sand. Here, too, the seepage water is dark and often iridescent. Fossil hunters have a happy time finding Cretaceous shells in the marl and even get a chance at dinosaur bones in adjacent strata. Beautiful blue crystals of vivianite may fill the hollows in fossils.

On the Chesapeake, high cliffs give an excellent cross-section of Miocene to Cretaceous strata. Above are usually alternations of reddish and light sands, often with a layer of gravel and large plates of limonite further down. (The white top layer of the pine forests is usually absent in this area of deciduous growth.) Below to the shore line may be hard dark sandy clay with here and there white, red and lemon-yellow efflorescences. Dig, and you may find pyrite concretions. Why is the clay often at the beach level? Probably because the higher cliffs would not stand unless it were! Shell layers may be visible at various heights and suggest the debris of a modern beach, though some millions of years old. The beach pebbles fallen from the bank look like jasper but actually are "decayed" and resilicified pebbles of all kinds belonging to a previous "incarnation," to which an occasional fossil attests. Jasperized wood with beautiful texture, on the other hand, seems to be of the same age as the sediments of the cliffs.

Hunters of Indian artifacts find arrow points of "Cohansey quartzite" all over Delaware and eastern Maryland and Pennsylvania as well as New Jersey, though the total material comes from a few boulders (I have seen no outcrops) on Cohansey Creek in the last state. This stone is a mixture of sand and shells cemented with silica and is often of beautiful translucent colors and patterns and conchoidal fracture. It is obviously of the same raw materials as the shell layers mentioned, and rather younger than some of them, but through a local quirk of Nature hardened to substantial rock.

New Jersey is famous for ceramics from the clays along the Delaware and Raritan. In the vast pits at Sayresville, with their gray blue and rusty streaks and faint sulfurous odor, beautiful pyrite balls may be found. These, too often, in our collections develop a white "beard," and fall apart.

All these things by no means exhaust the mineral interest of the coastal plain, but they are all connected with the *cycle* of *iron* in nature, and are a particularly visible sample of it. One who looks into these interactions soon has a feeling that inorganic Nature is continually building up and wasting, fermenting and stewing almost like living things, and indeed, in close cooperation with the more organized world.

Two paradoxes stimulate one's curiosity: Why in this area of light-colored soils, which are nearly all quartz, and distinctly low in iron, should the iron cycle be especially prominent? And why do we see iron leaching away and redepositing in close juxtaposition, and apparently under the same circumstances?

Half the answer to the first puzzle is simply the existence of good conditions for observing even small changes in, and movements of, iron compounds. The other half lies in all the factors except the first, below, which promote the leaching of iron (and other elements):

(1) Supply of iron - low in Coastal Plain
(2) Supply of water - adaquate
(3) Accessibility of iron to water (porosity of soil) - high
(4) Chemical adjuncts to solution - usually favorable
(5) Time - enough to show effects, not too much to have leached completely.

Those who live in glaciated regions with gravels of fresh igneous rock, or know only beaches and dunes, or completely leached ancient sandstones, should beware of the superficial similarity of the unconsolidated Tertiary and Mesozoic strata of the Atlantic seaboard, which are in a different and interesting stage.

Now the essential details of the natural chemistry of iron are simple, and it might seem that the iron cycle would be completely understood for all practical purposes. This may be the case with the specialists, but the more available books do not give a wholly satisfactory answer to the second paradox. My immediate interest in the problem of limonite concretions (and therefore the iron cycle) was Jeff Hill's and Harvey Franz' hypothesis that certain limonite tubes were made by lightning (R & M, Sept.-Oct. '48, Nov.-Dec. '49). While remaining open to new evidence, I tentatively assume these tubes are just one of the typical forms of iron concretions, because of (1) their abundance, (2) their similarity to other extensive deposits ascribed by no one to lightning, and (3) the complete lack of specimens showing melting, blackness, magnetism, and other signs of recent heat.

When I finally got around to tabulating all the natural methods of taking up and redepositing iron (Table 1), the result was more complicated and more ambiguous in its implications than I had expected. Without elaborate quantitative local investigation, the conditions at any spot might favor leaching or precipitation of iron, with perhaps more than one chemical possibility on either side. Finally, however, this unsatisfactory situation was remedied by an idea and a little chemical sleuthing.

The more obvious part of the idea is that a copious water flow always in one direction in well-drained soil ultimately will produce leaching, even if the right chemical conditions are only temporary and local. The exact nature of the chemistry thus becomes of secondary interest as far as geology is concerned. It is not so obvious, but equally certain, I think, that where this flow is impeded locally, by roots or stones, or impervious layers of clay, and general conditions can and do pertain which *alternately* favor solution and precipitation, iron will be deposited *preferentially* in such places.

Above such impediments relatively concentrated solutions collect in greater amounts and remain longer. Over extensive layers of clay there may be an actual filtering out of colloidal iron, as well as a general horizontal component of flow. Without going into intricate detail, it is plausible that *if* continuous impervious deposits of limonite are formed, they will be in such places. To produce the observed effects, deposition needs to occur only *occasionally*. We might not have predicted in advance that the accumulation of iron would be sufficient to produce massive concretions, rather than merely a deeper stain, but we need not be puzzled when such concretions actually occur.

However, for Doubting Thomases, I have evidence that one type of chemical action actually occurs which gives, progressively, solution of iron and later deposition of it (Table 1, No. 9, 18) under

steady-state conditions. (This involves ferric iron, only, but presumably could work with ferrous iron, calcium, or magnesium, and even slightly with aluminum. The depositional feature would, of course, be lacking with sodium and potassium.) By itself, this time reaction explains deposition at gradually increasing *depth*. The humic acids (themselves oxygenated products of plant decay) dissolve (or at least hold) ferric iron as complex non-ionized humates. These gradually oxidize into simpler salts, which are no longer soluble, and hydrolyze to ferric hydroxide. (The end products with ferrous iron, calcium, and magnesium would be normal carbonates.) If anyone chooses to call the humic acid a protective colloid (for ferric hydroxide) which slowly disintegrates, the practical difference will be slight, and the theoretical rather involved and arbitrary. The humus from the resinous pines is visibly much more active than that from other plants.

We may also invoke to some extent the well-known principle that slightly supersatuated solutions deposit on already-forming crystals. This assumes that the iron concretions are at least in part crystalline, i.e., goethite. Lastly, channels left by decaying roots, etc., may be specially aerated or for other reasons the site of deposition of limonite.

Admittedly this does not explain completely the tubes of Hill and Franz, with their grooves. and sometimes fine central hole where presumably a root once passed. There is preponderant reason to expect the groove to be the under side, but observation of actual occurrences and intermediate or growing stages, in the Darwinian manner, is the way to a satisfying explanation of these formations. I have not yet found opportunity for this, and expect some other curious rock-hound to beat me to it.

The red soils of deserts are an expression of direct weathering in situ (without leaching and little hydration or reduction by organic matter) of relatively iron-rich rocks. A slight reverse movement of water, upward from ground water by capillarity and evaporation, will account for incrustations which may be formed. The infertile laterite soils of rainy hot regions, though often red, are best regarded as nearly the end products of leaching of aluminous, rather impervious, soils. Considerable, even of the iron, is widely removed, and the rest evenly distributed in the clay minerals. The completely leached ancient, but still unconsolidated, sandstones, such as the Ordovician St. Peter's of Illinois are the result of much time without other metamorphism and without influx of colloidal silica from the disintegration of feldspar and other silicates. Ordinary residual soils in hilly regions are too compact and clayey, too thin and too quickly eroded to show the phenomena of leaching clearly. Where the underlying rock is iron-rich, they may be a conspicuous red-brown, but they are too damp to be the "purple red" of deserts and the Triassic formations, and possibly too humus-rich, and too oxygen-impermable, — too ferrous, — as well.

The greensand marls of the coastal plain were laid down in the sea as calcite- and phosphate-rich shell layers with organic matter, sand, apatite, feldspar, and iron (trapped as pyroxene or biotite, etc., in the sand grains). The iron is reduced to ferrous phosphate and other ferrous compounds, probably before retreat of the sea. The relative scarcity of the marl (as opposed to limestones, shales, sandstones) can well reflect the rarer conditions under which masses of minerals other than quartz reach a final resting place under the sea without complete disintegration on the shore, if not previously in the soil and streams. The potassium, the phosphorous, the silicic acid which forms the hydrous silicates, as well as the iron, originate in these constituents. If now buried deeply, the marls would be the makings of an oil shale, and ultimately, if rich enough, and squeezed enough, a deposit of free petroleum. But raised above the sea level as in our coastal plain, leaching and oxidation set in. The iron is already in a relatively soluble condition in part, and probably contributes directly to some deposits of bog ore, where the slopes and basins are in proper

relation. Meteoric water from overlying sand formations brings some iron and also potassium and silicic acid from feldspar decomposition. The zeolitic compounds in the marl take up the potassium, and we have the resultant potash-phosphorous rich fertilizer for which the marls were formerly used.

What is the ultimate fate of these marl beds? With little heat, but after long periods of burial, we may get the cherty greenalite of the Lake Superior iron regions, with the adjacent tremendous hematite deposits (once, probably, something like bog iron). The "fermentation" has been "frozen in", and we have an inert dense counterpart of the unconsolidated marl. From the scarcity of such greenalite, however, we must infer that marl usually is either completely leached and oxidized to ordinary soil before consolidation, or in some cases by heat converted into dark igneous rocks.

Bog ore was the first raw material of our iron industry, which developed in the Coastal Plain, where charcoal was also available. The standard explanation for the deposition of this ore (Table 1, No. 8, 9, 16, 19, 15) is that organic matter reduces (if necessary) the iron of the rocks and soil, dissolves it as ferrous bicarbonate which is transported by the ground water and streams to stagnant bogs where by loss of carbon dioxide, on exposure, siderite (ferrous carbonate) is deposited, or by oxidation, limonite. Actual siderite deposits must be so formed, but as indicated before, I have found ferric iron in solution in bog water in a non-ionized form not precipitated by boiling. In Nature it can only be precipitated by destructive oxidation of the humic acid holding it. This simpler scheme may account for most of the bog ore of the coastal plain.

The role of sulfur is interesting and sometimes important in the transport of iron. Because we so often find pyrite and marcasite in conjunction with putrefying organic remains, there is a temptation to assume the small amount of organic sulfur is responsible for their appearance, but this supply is wholly inadequate. We must look to the sulfates as the source, and ultimately to sea-water, which is the usual place (except in mine waters flowing over primary sulfides) where sulfates occur in fair concentration. The anaerobic decay of organic matter (Table 1, No. 2) derives its energy from combustion with the oxygen of the sulfate and enables the formation of pyrite and fixation of iron.

We may write a few balanced equations in mineralogists' language, with carbon and hydrogen in proportions about as in organic matter, just to show the possibilities:

12 gypsum + 3 limonite + 15 carbon +15 hydrgen *give* 12 calcite + 6 pyrite + 3 carbon dioxide + 39 water

6 gypsum + 3 siderite + 7 carbon + 7 hydrogen *give* 6 calcite + 3 pyrite + 4 carbon dioxide + 19 water.

When the pyrite is weathered, many things can happen, typified by the following equation:

2 pyrite + 7 oxygen + 2 water *give* 2 ferrous sulfate (anhydrous melanterite) + 2 sulfuric acid

4 ferrous sulfate + oxygen + 10 water *give* 4 limonite ("gossan") + 4 sulfuric acid

2 pyrite + 2 sulfuric acid + oxygen *give* 2 ferrous sulfate + 2 sulfur + 2 water

Calcite + sulfuric acid + water *give* gypsum + carbon dioxide

Limonite + sulfuric acid *give* basic ferric sulfate + 2 water (reversed by much water)

In addition many minerals such as feldspar and even clays can be attacked by the sulfuric acid which is reliberated in the cases of aluminum and iron to catalyze more decomposition, until at last, the acid is again all in the form of sodium, potassium, calcium or magnesium sulfate.

Clay and marl are variously defined and grade into each other as well, giving dark strata which may sometimes be confused. As far as iron is concerned, we might almost make a distinction by saying marl shows the phosphate and hydrous silicate chemistry, and clay the sulfate chemistry,

TABLE I. SOLUTION and DEPOSITION of IRON by NATURAL AGENCIES

Significantly soluble in water: FERROUS sulfate, bicarbonate, hydroxide, "humate" FERRIC "humate", basic sulfate
Essentially insoluble in water: FERROUS sulfides(troilite,pyrite), carbonate (siderite), phosphate(vivianite) FERRIC hydroxide(limonite,goethite), basic phosphates, (no carbonate or sulfide, wet)
Soluble in sulfuric acid: all Soluble in humic acids: siderite, troilite, limonite Soluble in carbonic acid: siderite, troilite

CHEMICAL EFFECT → (on surroundings)	Double Decomposition (Solubilizing or Depositional)	Reducing (Solubilizing, except temporarily, when sulfides formed)	Acidifying (Solubilizing in all cases)	Oxidizing (Depositional, except when sulfuric acid formed)	Deacidifying (Depositional in all cases)
AGENCY:					
Living Plants					
Photosynthesis (anabolism, sunlight)	Formation of complex iron compounds (1)	Consumption of nitrates (2)		Evolution of oxygen (3)	Consumption of carbon dioxide (4)
Catabolism (also of animals)		Consumption of oxygen (5)	Production of carbon dioxide (6)		Production of urea, etc., (animals) (7)
Dead Vegetable and Animal Matter					
Aerobic Decay		Consumption of oxygen (8)	Production of carbon dioxide (9) humic acids (10)	Production of nitrites, nitrates (11) peroxides and catalysis of autoxidation (12)	Destruction of humic acids (13)
Anaerobic Decay		Production hydrogen methane, unsaturates carbon (14)			Production of ammonia (15)
In presence sulfates, sulfur bacteria	Pyrite (direct from silicates and hydrogen sulfide?) (16)	Production of hydrogen sulfide of equivalent (17)			
Air and Water			Sulfuric acid from pyrite (18)	Ferrous sulfate and sulfur from pyrite (19) Ferric from ferrous compounds (20)	
Immersion, Burial, Pressure Low Temperatures			Retention of carbon dioxide (21)		
Wind, Convection, Exposure, Heat					Loss of carbon dioxide (22)
ULTIMATE LEACHING TENDENCY	SUBWARINE 6,14,16,17,21 7	SUBTERRANEAN 6,14,(17),21	SUBAQUEOUS 6,14,(17),21 7	SUPERFICIAL 9,10,18,19 4,7,12,13, 20,22	PROBABLY UNIMPORTANT 2,11
DEPOSITIONAL TENDENCY				1,5,8 3,15	

TABLE II

COLORS FROM IRON ON THE GRAND SCALE

(in admixture with colorless minerals and humus)

Red	Powdery hematite	(Ferric, anhydrous)
Orange	Hematite-limonite mixtures	(Ferric, hydrous)
Yellow	Limonite, powdery goethite	(Ferric, hydrous)
Brown	Massive Limonite, phosphates, powdery goethite (mixtures with humus important)	(Ferric)
Green	Unweathered igneous rock, e. g., actinolite	(Ferrous)
Blue	Phosphates (vivianite)	(Ferro-ferric)
Violet	Ferric nitrate; interlattice ferric oxide (amethyst) (No importance in nature)	(Ferric)
Black	Magnetite	(Ferro-ferric)
	Massive Hematite, goethite	(Ferric)
	Mixtures of red and green in nature)	(Ferrous + ferric)
White or Pale	Some sulfates and phosphates (slight importance in nature).	(Ferrous and ferric)

of iron. I have found the clay beds along the Chesapeake to be strongly impregnated with pyrite and ferrous sulfate, the red, white, and yellow efflorescences to be basic ferric and ferrous sulfates with some free sulfur in the last case. Carbonaceous material is still present with even an easily detectable amount of nitrogen. Phosphates are absent and magnesium and calcium are low, which means soluble sulfates other than iron are also low, whereas marl contains all these substances.

The last fact certainly strengthens the belief that the pyrite was formed under the sea from iron already in the sediments. On the other hand, with the plain evidence of iron still percolating down to the very boundary of the clay, it is hard to give up the idea of its being involved in the pyrite formation. There is also a temptation to feel that some of the finer clay particles may have found their way down through the sand and gravel to their present position, mechanically and chemically, instead of being laid down in place under the sea. This contradicts widely accepted geologic assumptions.

The ultimate geologic fate of iron, after repeated wanderings by all the mechanisms that have been suggested, is to be taken up as ferrous silicates by igneous action, losing oxygen in the process if it is (as usual) present in ferric form. Thus the iron cycle is completed.

It is important to see the reciprocal significance of the migration of iron to the organic agents which promote it. Iron is the great oxygen carrier as well as coloring agent.

The reader will find an analogy between the problems concerned with the functioning and transport of iron and those of petrification (silicification), growth of low temperature quartz, and limestone cave formation. I am at present trying to bring into a more-easily-grasped relationship the "cycles" of the dozen or so elements which are important in the grand operations of Nature.

Would Surely Miss It!

Editor R. & M.:

Here's another year's subscription. I've had ROCKS AND MINERALS for so many years it's like my right arm—wouldn't know what to do without it.

It's a wonderful magazine!

Lottie M. Shipley
Bayfield, Colo.

Sept. 6, 1952

SAMUEL G. GORDON

In early 1912, a group of about a dozen students of geology, at Wagner Free Institute of Science, Philadelphia, including Samuel G. Gordon and the writer, were invited by the instructor, Edgar T. Wherry, to become members of the Philadelphia Mineralogical Club, (later the Philadelphia Mineralogical Society). For some time the activities of the club had been decreasing, but in the following 12 months, some 20 new members were added. A powerful enthusiasm developed in this new membership. Mines, quarries and dumps were visited on Sundays and holidays under the leadership of Sam Gordon; including many, long considered hopelessly exhausted. The area of our activities increased and soon extended into north Jersey, New York and Maryland. Difficulties and hardships were encountered in securing transportation to fit into our limited time. (One single day trip into Lehigh County consumed over twenty hours). Sam worked hard on planning the various trips and creating schedules to make them practicable. Motor cars were still a great luxury and seldom used on our excursions. In referring to notes on the numerous collecting trips, some with Sam alone and others with groups of jolly enthusiastic fellow members, many very happy experiences were recalled, in which Sam was the leading spirit.

Eagerness for new fields of exploration reached a high pitch, when Gordon studied the reports of certain Danish scientists on minerals of Greenland. In this new zeal was born a determination to reach that far country, culminating in the purchase of an old 25 foot boat at Wilmington, Delaware by Gordon and Frankenfield, for $125.00. Several trips were made by us to paint and caulk the hull of the ancient craft. Finally, on a calm autumn Sunday, we drove the vessel up the Delaware to northeast Philadelphia and by the active aid of the bilge pump we reached a safe anchorage off Bridesburg. That same night the "Enstatite" sank to the bottom of the river, ending for some years the dream of Greenland conquest.

During 1915 a number of the members, led by Gordon concentrated on the desire to establish a mineralogical magazine, there being none to take the place of the lamented "Mineral Collector" published by Arthur Chamberlain until 1909.

After many discouragements and great help of Dr. Edgar T. Wherry, the dream fathered by Gordon materialized in publication of the AMERICAN MINERALOGIST, in July 1916, made possible by advertisements of mineral dealers and some donations of cash, among which were several of one hundred dollars from our enthusiastic new member Col. Washington A. Roebling. Sam was able to inspire the most faint hearted and the magazine was kept going only by the most rigid economies. It was a success from the start and when the newly organized Mineralogical Society of America, in 1920, offered to assume responsibility for its continuance, as their journal, it was entirely solvent.

T'was a great day for Gordon when in 1913 he became Jessup student in the Academy of Natural Sciences Mineral Department, where a strong bond of friendship and admiration was formed between him and George Vaux, Jr. (Treasurer), Frank J. Keeley, (Curator) and President Charles M. B. Cadwalader, leading to expeditions being taken to Greenland, Chile, Peru, Bolivia and South Africa. The results of these trips yielded rich additions, not only to the Academy collections but to those of other institutions, thru trading, gift or sale. From these sources, finds which proved new to science were obtained, described and named by him; among which were Vauxite, Paravauxite, Meta-Vauxite, Keeleyite, Penroseite, Trudellite and Cadwaladerite.

In 1922 the Philadelphia Academy of Natural Sciences published Gordon's — "The Mineralogy of Pennsylvania," a complete and thorough compilation of Pennsylvania mineralogical localities, past and present, including a brief article on general geology with special reference to

the origin and occurrence of minerals. This work naturally proved to be very popular and the edition was soon exhausted.

Gordon supplemented his education by courses at Drexel Institute, University of Pennsylvania and Heidelberg University, Germany, under Dr. Victor Goldschmidt.

During the Second World War, on a leave of absence from the Academy of Natural Sciences, he worked with the U. S. Army in remedying the shortage of quartz crystals needed in the manufacture of radio and other electronic equipment and at the same time, in collaboration with William Parrish, (member of the Philadelphia Mineralogical Society), prepared a volume "Manual of Quartz Oscillator Blanks" for the office of the Chief Signal Officer, War De-

Photo by Harold Evans

Samuel G. Gordon.

partment. This work proved of inestimable value to the manufacturers of these commodities.

Samuel Gordon was the author of many and varied articles on the general subject of minerals. In more recent times he was responsible for the description of a new mineral from the Argentine, which was brought to the Academy by officials of the country and turned over to Gordon. He found it to be an undescribed species and named it Sarmientite much to the pleasure and satisfaction of the Argentinenians.

In 1950, in collaberation with Joseph J. Fahey and E. B. Daggett, (the discover) was able to name a new mineral in honor of Dr. Edgar T. Wherry, (who had been first Editor of the AMERICAN MINERALOGIST) a lead-copper complex from Arizona, Wherryite.

In 1930, Dr. Esper S. Larsen, gave the name Gordonite to a new species from Utah, a hydrous phosphate of magnesium and aluminum, related to Para-vauxite, an act which was most pleasing to Sam's many friends and admirers.

After thirty-six years at the Academy of Natural Sciences of Philadelphia, Gordon accepted a more remunerative position with the Atomic Commission at Oak Ridge, Tennessee and was later transferred to Los Alamos, New Mexico. After some months there, he returned to Oak Ridge, where he became ill and came to Philadelphia for treatment. Apparently recovered, he reported back for duty but accompanied by Mrs. Gordon and an official of Oak Ridge, he was fatally stricken while driving in Ohio. He died at Cincinnati, May 17, 1952.

His tragic loss to his associates, friends and admirers, is irreparable.

Harry W. Trudell

FAMOUS TOURMALINE MINE TO BE REOPENED

The Himalaya Mine located at Mesa Grande in San Diego County, California, has recently been purchased by Mr. Ralph R. Potter of La Mesa California. Mr. Potter plans extensive operations in the near future and preliminary investigations indicate that the famous old mine will again produce choice tourmalines and associated minerals to grace the country's mineral cabinets and give the lapidaries some seldom to be obtained material to work with.

The Himalaya Mine, which has been labeled ". . . . . the greatest producer of gem tourmaline in North America" by Dr. Richard H. Jahns, Caltech scientist and one of the world's leading authorities on pegmatite formations, produced in excess of 25 tons of tourmaline of various grades between 1904 and 1914. One fabulous pocket produced six tons of tourmaline and another produced 1,500 pounds. Interesting associated minerals include stibiotantalite, cassiterite, apatite etc.

Progress of operations will be reported from time to time.

MERRITT HERRING WINS AMERICAN FEDERATION PRIZE

For his article called "Two Localities of Alpine County, California," Merritt Herring has won the first prize of a $25 Savings Bond in the latest eassy contest sponsored by the American Federation of Mineralogical Societies.

The winner, who was a student in El Cerrito High School at the time of his entry into the contest, now lives in Berkeley, Calif. He has been interested in the earth sciences since the age of seven. His article reveals an unusual spirit of observation and exploration, and is illustrated with his own photographs.

The contest, which was arranged by Richard M. Pearl of Colorado Springs, Colo., had entries from all parts of the country. The judges were Frank L. Fleener of Joliet, Illinois; Olivia McHugh of Salt Lake City, Utah; and Robert Deidrick of Oakland, California. Acceptance of the winning essay was made by the delegates to the Canon City, Colo., convention of the Federation during the last week in June, 1952.

Mr. Herring's winning article appears in this issue.

A SIMPLE POLARIZER

By T. O. ALEXANDER, M.D.

Among the methods now available for testing for double refraction, one can resort to the petrological miscroscope, the dichroscope, or to two round, flat polaroid lenses.

These lenses are well applied to the construction of a simple and yet quite accurate device for distinguishing singly-from doubly refracting crystals. Such lenses are available reasonably as war surplus and are within the reach of every amateur interested in making a useful polarizer. Slight defects at the periphery of the lenses do not interfere with their usefulness.

The apparatus consists of two rims which hold the lenses in a fixed "crossed" position, and which are mounted, after proper alignment, to either end of a wooden holding bar or handle.

A rim can be made from the end of a can of appropriate size, which will admit the lens and still not be too large and allow excessive play. A circular cut of the can wall is made, a short distance from the end of the can, leaving a ½" sleeve. A round opening is then cut within the end, leaving about ¼ inch of metal to act as a shoulder.

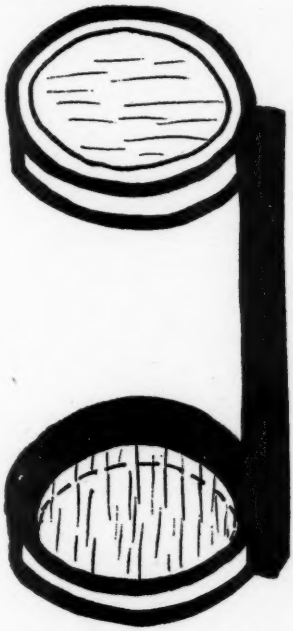


Fig 1.

The lens is then laid over this opening. It can be fixed after orienting by placing a layer of felt tape against the can wall or sleeve, and adding an inner piece of clock spring. The spring will flatten the tape against the side wall and immobilize the adjacent lens. Each rim can then be aligned and securely screwed through its sleeve to the opposite ends of a wooden handle of suitable thickness, about 4½ inches in length. Figure I shows a finished model.

Although several methods will be obvious for fixing the lenses to various rims, the above device in principle is simple to make, portable and inexpensive. It is as practical for field use as for use at home, or in the shop.

Truly doubly refractile stones turn homogeneously light and dark four times with each complete revolution between the "crossed" polaroids, providing the stone is oriented correctly. Singly refractile crystals, as well as some poorer imitations, remain dark when rotated.

Anomalous double refraction in stones that are singly refractile, and strain in various imitations are evidenced by dark, moving bands within the stone as it is rotated between the polaroids.

Our Youngest Subscriber Enjoys Rocks!

Editor R. & M.:

I am a very young subscriber of yours.

I am only 7 years old but enjoy looking for unusual rocks. I have come back home from a trip to Lake Ontario. I found many kinds of rocks for my collection.

William J. Mahannah
225 Kuethe Road
Glen Burnie, Md.

Sept. 1, 19552

MASTERING MARCASITE MALADY

By DAVID E. JENSEN
Ward's Natural Science Est., Inc., Rochester, N. Y.

A few years ago, an acquaintance decided to move to a distant city. Not wishing to take his mineral collection along until he had a proper place for it in his new home, he wrapped the specimens carefully and had them stored in a neighbor's cellar for about three months. When it was finally possible to unwrap the minerals again, the owner was quite disappointed to discover that a prized cockscomb marcasite had started to crumble to a gray powder and that the paper next to the specimen, and the label, had turned dark brown.

The long sojourn in a damp cellar had caused another fine marcasite to become a victim of a common marcasite malady that might facetiously be called "too much water on the molecule." Museum curators and collectors alike have often been dismayed to find choice marcasite, and some pyrite, specimens would eventually disintegrate. There is no certain way to predict that this will happen. Specimens from some localities are more prone to decomposition than those from other localities. Specimens from coal beds are especially susceptible.

It is interesting to note that many centuries ago, Agricola and others were aware of the tendency for certain types of pyrite to become moist and alter to vitriol. For this reason, it is believed that marcasite was once called "wasserkies," although this name may only have been a corruption of "weisserkies" (white iron pyrite).

There are several steps that can be taken to prevent marcasite from disintegrating, and can also be used to prevent disintegration from continuing once it has started provided that it has not gone too far. First of all, it is necessary to know what takes place. Certain marcasites, and some pyrites, will quickly react with water which is essential to the disintegration process. Ferrous sulfate and sulfuric acid are then formed, the acid helping to speed the disintegration. Knowing this, it is essential to keep the specimen dry at all times. If it is accidentally washed, or it comes in contact with damp air, one should proceed to remove the moisture, remove any acid that may have formed and then to dry the specimen thoroughly.

Many recommend that the specimen be washed with alcohol. This will remove water and acid. If alcohol is not available, acetone or ether may be used, but care must be used as both are highly inflammable. If neither is available, the specimen can be washed in clear water until no sign of acid remains (Testing with blue litmus — acid will turn blue litmus red.) Or, the specimen can be washed or set in water to which ammonium hydroxide has been added, and then washed in clear water. After washing, the specimen should be dried thoroughly with low heat. The above steps may be taken once a specimen has started to disintegrate, although the chances for curing the trouble are inversely proportional to the extent of the damage.

Once the specimen has been thoroughly washed and dried, it will not disintegrate further unless it is exposed again to moisture or damp air. In an arid climate, little problem would exist. Experience is the best guide. To be on the safe side, the dried specimen may be sprayed with thin clear lacquer or plastic. If a spray is not available, the specimen may be dipped. Another successful method is to embed the specimen in clear plastic. If the specimen is small this method is very good as the resultant plastic block can be set for display. For large specimens the cost of the plastic would rise considerably.

It is important then to remember to keep marcasites dry. Don't wash with water unless you have to. Wash them with an organic cleaner, alcohol, acetone, ether, carbona (carbon tetrachloride) but be careful of the inflammable cleaners like ether and acetone. If you must wash marcasite with water, dry the specimen

A fine crystallized marcasite, Treece, Kansas.

Photograph by Mrs. Katherine H. Jensen

thoroughly with heat. If your marcasite starts to disintegrate (a white or gray powder will form on the surface or along cracks, and the paper on which it rests will start to turn brown or black), wash it as outlined above to remove acid dry and coat it with lacquer or plastic for future trouble free preservation.

Don't let this discussion keep you from owning a fine marcasite. Specimens like the one illustrated are a joy to any collector. Many marcasites are completely stable. Others will disintegrate but if properly cared for, can be made to last.

Reference

Mineral Collectors Handbook
By Richard M. Pearl
Mineral Book Co., Denver, Colo.

A Library of Gem Stones!

This "Library of Gem Stones" has nothing to do with books. It is a collection of 30 precious and semi-precious gem stones, small in size, mounted in a 30-pocket container and all bound as a book—a unique method of housing a gem collection.

The gem stones are brightly colored, nicely displayed, and labelled; a thick sheet of cellophane holds them all snugly in place. A 2-page table of names of the gem stones, their hardness, specific gravities, refractive index, crystal forms, chemical formulas, and places of origin is an added feature. The "book" fits snugly into a dark red folder, 4x5½x3/8 inches in size, which can easily be carried in a man's pocket or woman's handbag.

$5.00 postpaid—with rough stones
$9.00 postpaid—with polished stones

For sale by Rudson-Wood, Inc., 15 W. 44th St., New York 18, N. Y.

A Little Miss Pleads For Help!

Editor R. & M.:

Last April when I was 8 I got ROCKS AND MINERALS for my birthday. I like it very much.

I'm trying to put all my SiO_2's (quartz to ordinary people) into 8 wooden boxes to fit in a cabinet. I want to show all the types and formations.

Could you please tell me where I can get some prase? I have never seen it advertised in "R&M".

I have a green mineral which has been identified as prase but Mr. Thomas tells me it is either chrysoprase or plasma.

Thank you.

Carol Triem
14 Forge Road,
King of Prussia, Penn.

Aug. 22, 1952

E. M. MARSHALL

(Obituary Notice)

REDDING RIDGE, (Conn.), July 11 — Private services for Ernest M. Marshall, 77, of Sport Hill Road, geologist and chemist who died yesterday in Bridgeport hospital where he was admitted June 28 for medical treatment will take place tomorrow in the Henry E. Bishop and Son funeral home, 1139 Fairfield Avenue, Bridgeport. Burial will be in Cedar Hill Cemetery, Hartford.

Born in Edinburgh, Scotland, Mr. Marshall was awarded his B. S. degree in organic chemistry at London University.

Did Research On Milk

His first position following graduation was that of making coffee essence for an English firm. Following a job with a South African firm, Mr. Marshall worked on England's first homogenized milk, stocked Buckingham Palace pond with fish, and dabbled for a time with motion pictures.

Just prior to World War I, Mr. Marshall and his first wife, who died in 1918 moved to San Diego, Calif., where he was associated with a salt works. In the course of his work, he noticed that the mother liquid of the salt was being discarded and managed to make a deal with his employer to get the liquid gratis. From this he extracted chloride magnesium, epsom salts and potash.

As World War I approached, these minerals became very important with the removal of the German counterparts from the market.

Fought With British Army

During the war, Mr. Marshall joined the British army and by 1918 was an experienced marine engineer.

He was a member of the American Chemical Society, American Geological Society, American Mineralogical Society, Rocks and Minerals Association, and the Natural History museum. He was former president of the Bridgeport and New Haven Mineral clubs.

Mr. Marshall is survived by his wife, Mrs. Caroline Clark Marshall, and a daughter, Miss Caroline Marshall.

The Bridgeport (Conn.), Post Friday, July 11, 1952.

Best of 33!

Editor R. & M.:

Please renew my subscription for *Rocks and Minerals* for another year. It is the most thoroughly read and reread of the thirty-three magazines that come to our house.

James B. Irvine
Collegeville, Penn.

Aug. 26, 1952

COLLECTOR'S COLUMN

Conducted by A. CAL LECTOR

This column, designed to be a help to beginners in Mineralogy, began with the September-October, 1948. issue. In the last issue our subject was galena. This time let us look at almandite, perhaps the most common variety of the six minerals called the garnet group. The garnets all crystallize in the isometric system but vary somewhat in their chemical make-up and associations.

The name almandite is believed to have come from Alabanda, where garnets were cut and polished in ancient times. Almandite is a silicate of iron and aluminum. It is about 6½ to 7 on Moh's scale of hardness. The color ranges from a fine transparent, deep red in the precious variety to translucent and almost opaque brownish red in the common type. Almandite is most commonly found in mica schists. It ocurs as crystalline masses, irregular grains, and as fine dodecahedron and trapezohedron crystals.

Interesting specimens have come from Austria, Sweden, Norway, and Japan. Gem quality material has been found in South Australia, Brazil, North India, and Ceylon. Fine crystals, though usually not of gem quality, are found in a mica schist near Fort Wrangel, Alaska.

In the United States, fine crystals were formerly found at Leiperville, Deleware County, and Pennsbury, Chester County, both in Pennsylvania. Large crystals, altered on the surface to a chlorite called aphrosiderite, are found at Salida, Colorado. Roxbury Falls, Connecticut, still produces interesting specimens. At Gore Mountain in New York, massive garnet, asociated with hornblende, is mined for abrasives.

Your collection should contain one or more garnet crystals; your dealer has some, just ask him.

LOOKING BACK - - - -

Twenty-Five Years Ago in ROCKS AND MINERALS

September, 1927, Issue

The Ancient Silver Mines of Laurium, Greece, by Frederick M. Oldach, University of Pennsylvania, pp.86-88. A most interesting article on these historic mines which are still in operation today and which have furnished a number of fine minerals for collectors. And the author, Mr. Oldach, is still on our subscription list.

Mineral Localities of Maine, by Charles F. Marble, p.88. The Greenwood mine, noted for many minerals, was described. Mr. Marble, one of Maine's most noted collectors, is still with us today and still an active collector. On Sept. 2, of this year, we received a most interesting sample from him, a gold bearing sand from Maine which he had collected just a few days before sending it.

Some General Notes on Broken Hill, by M. Mawby, p.89. Broken Hill, N. S. W., Australia, is one of the world's great mineral localities. A number of minerals from this famous lead-silver mine were described by Mr. Mawby.

The Mineral Cabinet, by Edwin F. Gross, pp.90-92. An interesting article on housing a mineral collection.

Glossary Department, p.93. Continuation of a list of various mining, mineralogical, and geological terms.

Notes on the Hardness of Minerals, by Gilbert Hart, pp.94-95. A discussion on the hardness of minerals and how determined.

Mount Apatite, Maine, by Elizabeth V. Browne, p.95. A short item on this famous locality which obtained its name from the beautiful purple apatite crystals which once were found there in profusion.

World News on Mineral Occurrences

Items on new finds are desired. Please send them in.

Abbreviations: xl—crystal xled—crystallized xline—Crystalline

ALABAMA — William M. Johnson, R.F.D. 6, Knoxville, Tenn., informs us that talc has been mined near Winterboro, Talladega Co., Ala. This talc was broken and could not be mined for demension material but could be used in the iron industry. It contained about 2% quartz, and 2% iron oxides.

ARIZONA — J. C. Filer & Son, 1344 Highway 99, San Bernardino, Calif., has sent in a handsome specimen of dioptase containing some dainty little greenish xls of dioptase. Their letter of July 24, 1952, reads:

"The enclosed specimen of dioptase is one of the minerals covered in the ad we just sent in. This specimen of dioptase is one of quite a number taken out a couple of months ago when a new pocket was broken into in the Mammoth Mine, Tiger, (Pinal Company), Arizona."

ARKANSAS — Another note has been received from William M. Johnson, R.F.D. 6, Knoxville, Tenn. In his letter, dated Aug. 15, 1952, he writes:

"A quicksilver deposit has been mined near Kirby, in Pike Co., Ark. The cinnabar (chief ore of quicksilver) is generally xline with xls up to ½ inch in size. Many xls are perfect rhombohedral twins. With the cinnabar is found dickite (a soft kaolin), some vein quartz, much iron oxide, and a small amount of stibnite."

CALIFORNIA — A large greenish-white mass of jadeite, not of gem quality but most interesting, was on display at the Canon City, Colo., Convention June 26, 1952. The jadeite was the property of L. J. Bergsten, 3041 Delaware St., Oakland, Calif., and its locality was Clear Creek, San Benito Co., Calif.

A very nice light greenish (but stained brown) foliated mass of talc has been donated to R. & M. by Julian A. Smith, Route 2, Box 786B, Modesto, Calif. The talc was found in a road cut in weathered serpentine near San Andreas, Calaveras Co., Calif.

COLORADO — Nice chocolate-brown xled cyrtolite was found last year in the Pine District, Jefferson Co., Colo., so we were informed by C. W. Hayward, 7075 West 32nd St., Denver, Colo., when he was interviewed at the Canon City, Colo., Convention, on Friday, June 27, 1952.

Some of the world's finest pyrites have been found in Colorado and a noted locality in the State is Russell Gulch in Gilpen County. A small but very fine crystal group from Russell Gulch was presented the Editor of R. & M. by Robert D. Roots, 3147 West 39 Ave., Denver 11, Colo., during the Rocky Mt. Convention held in Canon City, Colo., June 26-29, 1952.

CONNECTICUT — The old copper mine near Bristol, Hartford Co., Conn., used to produce some very nice specimens. An old specimen recently seen from this locality consists of sharp drusy xls of chalcopyrite with small white platy barite xls on grayish-white quartz.

DELAWARE—Serpentine occurs about 6 miles northwest of Wilmington, New Castle Co., Del.

FLORIDA — The following letter, dated June 22, 1952, comes from Miss Vera Root Smith, 2011 Chamberlin St., Orlando, Florida.

"On June 17, 1952, Hazel Green and I found some casts of shells that pleased us very much. We were driving on Route 78 between Routes 41 and 31 north of Fort Myers (that is, between Salvista and Olga). Part of this road is being paved

so this information will, perhaps, be of only temporary interest.

"The washboard condition of the road made travel very slow and we observed the fossils from the car—stopping when we saw a likely-looking "stone."

"We obtained several fair casts of clam shells, about 1½" across, one ark shell cast of the same size; and several imperfect casts and molds in very fossiliferous chunks of limestone. Some of these latter showed well-defined fragments of scallop shells.

"My shell book, "Florida Marine Shells" by Vilas, states that fossil shells very similar to present-day Florida shells are abundant along the Caloosahatchee River and near Lake Okeechobee. Now, one can go from the Fort Myers area on Route 78 very near the north side of the Caloosahatchee all the way to Moorehaven near Lake Okeechobee. This is a rather poor and unimproved road currently but I just wish I'd had the opportunity to travel it all. We did not find anything so perfect that it would interest an advanced collector but other beginners might have as exciting a time as we did.

"I have found various imperfect but interesting fossils in road "fill" here in central Florida and that is a point some tourist collectors might like to keep in mind. We have only one small rock outcrop in my county (Orange) at Rock Springs near Apopka.

"The beaches at Cocoa, Titusville, Melbourne, etc. occasionally yield bits of coquina, coral, and fossil coral.

"At Fort Myers Beach and at Sanibel we found interesting specimens of a sort of pseudo rock—empty sea worm shells cemented together into masses of wiggly vermicular form.

"Really I haven't seen or collected anything yet in Florida that is outstanding in the rock and mineral line. As a related interest I do recommend shell collecting on the Island of Sanibel!"

GEORGIA — Nice specimens of black-green slender xls of hornblende with pyrite xls in dark green chlorite have been found at the Little Bob Mine—an old pyrite mine on Land Lot 625, Paulding Co., Ga.

IDAHO — Very nice specimens of anthophyllite, as compact grayish fibers over 9 inches in length, have been found near Teaken, Clearwater Co., Idaho.

ILLINOIS — The following letter, dated July 20, 1952, is from F. L. Fleener, 1415 Hosmer St., Joliet, Ill. It was sent direct to the conductor of this column.

"Enclosed note check to help carry my subscription for another year. I still like the old magazine. Some of the articles are superb, but your section on 'Mineral Occurrences' is a world beater and I hope it keeps coming.

"Was pleased to see you *at* Macalester, (St. Paul, Minn.) during the Convention even if I did not get to say more than Hello to you. We all thought the affair was very good, especially the displays from the different clubs. Not enough commercial stuff but there are good reasons given to eliminate convention conflicts and near conflicts in the future. I believe that Tom Scanlon will see to that matter.

"Collecting spots in northern Illinois are not too numerous but a few of them are quite interesting. At Buffalo Rock State Park, four miles west from the city of Ottawa, there are some culm piles of a grayish shale that were removed from immediately above a coal seam. These ridges make a fruitful place for collecting nodules of Marcasite crystals many of which are so new that they shine like a new dollar. These blobs of crystals occur in all sizes from single crystals to aggregates four or five inches in diameter. The bad part of the story is that they will not keep well in a collection unless they are immediately cleaned and coated with some colorless substance, like Acryloid.

"The distintegration substances from the crystals wash down the slopes and form reddish pools in the depressions between the ridges, a dash of tannic acid solution thrown into this water produces a very good ink. This furnishes a good

opportunity for an instructor to tell a class how our forefathers made their ink with copperas water and tan bark.

"The solutions that work their way into the shale unite with the calcium and the combination results in crystals of Gypsum. Usually they occur on the surface in the form of rosettes of fish-tail twins. They are very attractive but difficult to collect in complete form.

"Across the river at Starved Rock, Melanterite may be collected in some of the canyons where there are overhangs, but in no certain amount, depending altogether on the weather."

INDIANA — Two interesting limonite specimens have been received from Walter Reeves, R3, Greencastle, Ind. One is a dark brown pisolitic mass, the other is also dark brown but a cellular mass showing thin crusts of black turgite in the cavities, also a faint film of bluish-gray vivianite.

In his letter, dated July 5, 1952, Mr. Reeves write:

"The limonites are from Plummer's Hill, 7 miles west of Greencastle (Putnam Co.) Ind. Plummer's Hill rises several hundred feet above Eel River. Early settlers operated a smelter in this vicinity."

IOWA — It has long been known that the finest crinoid fossil specimens in the world are found in the limestone quarry in Legrand, Marshall Co., Iowa. The most noted collector of these fossils is B. H. Beane, of Legrand, Iowa, and it was our good fortune not only to meet Mr. Beane personally but also to see and examine his most precious crinoid specimen. This specimen, about a 15 x 15 inch slab of buff colored limestone showing about 75 complete crinoids with stems, arms and bodies, was exhibited at the Mid-West Federation Convention held at Macalaster College in St. Paul, Minn., July 1-3, 1952. Mr. Beane has been collecting fossils for 60 years and we hope that some day he may write an article telling us how he happened to find his choice specimen.

KANSAS — On a recent visit to Winfield, Kan., by the conductor of this column, he had the pleasure of calling on George M. Emrich, 210 Massachusetts. Mr. Emrich has a nice collection of minerals and we spent several hours examing the specimens. Some interesting specimens seen were brownish masses of petrified wood that came from the old Malcolm Farm, Longford, Clay Co., Kansas.

KENTUCKY — Bob Barnes, 3930 Brookfield Ave., Louisville, 7, Ky., sends in the following item:

"In the Millstone Mine, Millstone, Letcher Co., Ky., Marasite occurs as veins and wire-like hairs in bituminus coal."

LOUISIANA — A very fine specimen of palm wood, a thin slab with both sides polished, has been donated to R. & M. by B. M. Brehm, 990 Dana N.E., Warren, Ohio. The specimen is grayish and brown in color and comes from Leesville, Vernon Parish, La. Leesville is Louisiana's most noted petrified wood locality and it is Lovett Word, Box 1129, Leesville, La., who found the first specimens and announced their discovery in March-April, 1950, R. & M., p.149. Since this announcement made its appearance, many collectors have visited Mr. Word—a recent visitor was the above Mr. Brehm.

A letter from Mr. Brehm, dated June 23, 1952, reads:

"The Louisiana wood is very nice at times—as usual you can't tell good from bad until sawed so that's why I say, at times. Truly it's something I'm proud of having—the palm wood is good that I got on my visit to Mr. Word in Leesville. The man has a lot of the wood and fossils, etc., found in his area and well worth a visit to see and look at and marvel."

MAINE — A letter, dated July 27, 1952, was sent by Wallace Knapp, 60 South St., Rhinebeck, N. Y. He writes:

"I've just returned from a 7-day collecting trip to New England. Here are some of the specimens collected:

"Bumpus Quarry, Albany, Maine—Rose quartz, beryl xls (and massive), musco-

vite, manganapatite, black tourmaline xls, light smoky quartz.

"Mt. Mica, Paris, Maine—Green tourmaline, black tourmaline xls, beryl, muscovite.

"Harvard Quarry, Noyes Mt., Greenwood, Maine—Garnets, black tourmaline xls, green tourmaline xls, micro-quartz xls, manganapatite.

"Tamminen Pits, Greenwood, Maine—Green tourmaline, beryl, muscovite, montmorillonite.

"Mt. Newry, Newry, Maine — Black tourmaline xls, green tourmaline xls, tourmaline var. indicolite, cleavelandite, lepidolite, smoky quartz, spodumene.

"I also visited Lord's Hill and Kezar Lake in Maine."

MARYLAND — Many interesting specimens have been uncovered during excavations for buildings. The following is an example as called to our attention by John Wm. Siegle, The Greenway, Baltimore 18, Md., in his letter dated July 21, 1952.—

"As occurrence of casts of fossil shells of marine mollusca was uncovered in excavating for a building at Camp Parole, just south of Annapolis, Anne Arundel County, Maryland.

"The casts are thickly consolidated in a limonitic deposit probably of the Eocene epoch, comparatively recent in geologic time, dating very approximately 60 million years ago.

"Sizes of the whole casts range from 0.5 to 5.0 cm. Most are from shell fragments. The mass strongly suggests the conglomeration of shells we see today along the North Atlantic beaches when tides have piled up shells and shells fragments after a heavy disturbance off-shore. There are none of the exotic shapes associated with shells of the Carribbean and other warm seas.

"The following tentative indentifications have been made:

Crassatellites alto Conrad
Pecten choctavensis Aldrich
Glycymeris idoneus Conrad
Modiolus alabamensis Aldrich (questionable)."

MASSACHUSETTS — A letter, dated July 15, 1952, comes from Gunnar Bjareby, 147 Worthington St., Boston 15, Mass. It describes some interesting minerals that he has found.

"Here is a note for your section: Mineral News of the World:

"Last year I visited several dumps at shafts along the Quabbin Aqueduct. The dumps at Shaft No. 2 in Holden, Mass., are extensive and consist mainly of gneiss. Not many minerals were observed. Besides the usual gneiss minerals: Quartz, microcline, albite, muscovite and biotite, a few others were found such as pyrite, ilmenite, fluorite, calcite, an undetermined species of chlorite and bertrandite. The latter is of special interest in as much as this is the first find on record in Massachusetts. It occurred with other crystals of purple fluorite, quartz, chlorite, albite and a ferroan calcite with a bronzy appearance. The calcite had engulfed the the crystals. The bertrandite crystals are colorless, thin tabular and of the usual habits for this species. Miss Mrose of Harvard University examined the specimen.

"Ilmenite, in tabular rough crystals, was found in a roadcut on route 128 near North Woburn, Mass.

"Orangite in small masses of an orange-brown color were found recently close to a large mass of allanite. The orangite crystals usually have a brownish or reddish coating. The immediate feldspar matrix is nearly always brown, evidently caused by the radioactive elements in the orangite and allanite. The locality at Blueberry Mountain, Woburn, Mass., is in operation."

At the Mid-West Convention held at Macalester College in St. Paul, Minn., it was our good fortune to run into Joseph S. Rapalus of the Majestic Theater, Easthampton, Mass. During our talk we learned that he had found an unusually fine datolite specimen at the Lane's traprock quarry, near Westfield, Hampden Co., Mass.

The specimen was approximately 12 x 12 inches in size and the clear 1 to 2 inch crystals of datolite vary in color from

white to yellowish-green and are beautifully peppered with small amethystine quartz crystals. The specimen was found in September, 1951.

MICHIGAN—An agate weighing 112 pounds was found during May, 1952, near Rapid River, Delta Co., Mich., by Werner J. Vietzke, RFD. 1, Box 10, Rapid River, Mich. The agate measured 33 inches in length, was 18 inches wide and 4 inches thick. It was pinkish in color.

He plans to keep the agate in one piece, instead of cutting it up, so that he'll have proof that they come that large in Michigan.

A nice write-up and a picture of both the agate and Mr. Vietzke appeared in a May, 1952, issue of the Escanaba, Mich., DAILY PRESS.

Several years ago Mr. Vietzke found a nice 40 pound agate, gray in color, in the cow pasture on his farm north of Rapid River.

MINNESOTA — Wm. J. Bingham, 2100 Arcade St., St. Paul 6, Minn., was a busy man at the Mid-West Federation Convention held in his city July 1-3, 1952, but he found time to tell us about a new fluorescent calcite find in his State.

The calcite is a pale cream color and it fluoresces red under both long and short wave lights. Its locality is the Cuyuna Range, about a mile north of Ironton, Crow Wing Co., Minn.

MISSISSIPPI — Siderite, the carbonate of iron, has been found in the form of concretions in clay beds at Ackerman, Choctaw Co., Miss.

MISSOURI — A new find of salite was made in July, 1951, at Iron Mountain, St. Francois Co., Mo., we were informed by Mrs. Theodore Boente, 4980 Neosho, St. Louis 9, Mo., whom we met at the Mid-West Federation Convention in St. Paul, Minn., on July 3, 1952. A nice specimen of the greenish salite, a variety of pyroxene, was given us by Mrs. Boente.

MONTANA — Did you ever go on a sapphire hunt? Mr. & Mrs. Edward Dowse, 329 Reed Ave., Salt Lake City, Utah, went on such a hunt and it is described in his letter, dated June 25, 1952. It is printed below.

"Just came back from Montana on a sapphire hunt and would like to tell you about it.

"The wife and I met a man and his wife last fall at Ogden, Utah, and we got to talking about sapphires. He told me about a Mr. L. E. Hughes, at Hall, Mont., who had found sapphires and of gem quality who always wanted to have some cut. I wrote Mr. Hughes a letter offering to cut sapphire for sapphires.

"Some time later he sent me about a dozen. I cut some very nice stones from these sapphires but was not happy until I had found some for myself. In the mean time Mr. Hughes wrote me a letter saying that when the snow was off he would write again and let me know when to come up to hunt some for myself. Well, I got a letter the last part of May from Mr. Hughes so left one morning about five o'clock and was in Hall, Mont., by five that night (about 540 miles from Salt Lake City to Hall, Mont.)

"I went and looked up Mr. Hughes. He and his wife proved to be very nice and both very much interested in minerals. We talked about rocks until midnight and he showed me some sapphires, one about 15 carats in the rough, some a very nice blue, some green, pink, lavender, and yellow colored. Also a lot of small ones weighing from one to two carats, of which I would say were about 75% gem quality. Of course he also showed me lots of other minerals from his locality of which I will describe some to you. One was a large thunder egg marked like the Oregon egg with the star and the matrix around it and about 3 inches through; some still larger than this.

"He had some Amethyst single crystals not of gem quality but very nice specimens about the size of your finger and deep color. But to get back to the sapphires. He said, "I don't think you can get your car into where the sapphires are so you had better take my truck in the

morning and my wife will go and show you where they are and how we get them."

"In the morning we packed our lunch and my wife and Mrs. Hughes and I started on our merry way to search for sapphires. Mr. Hughes had taken care of the truck, had the screens, gold pans and all of the other things we had to have to get the sapphires. We drove about 50 miles that morning, crossed several rivers which looked like they might be good fishing as they were clear and cold looking. Drove on a gravel road most of the way, finally turning off and starting to drive up a gulch. The road was not so good, now quite a bit narrower and the further we went the rougher it got. I could see what he meant by not getting there in my car; only about two miles of this and we came into a small clearing where previous mining had been carried on. Two small log cabins were inhabited by pack rats.

"Well, we unloaded the truck and picked out what Mrs. Hughes said we needed for our venture in mining sapphires and started to walk on further up, taking with us our screens, shovels and so forth. On reaching the stream where the sapphires were to be found we saw plenty timber also plenty signs of ground slucing. The stream had been mined for commercial sapphires at one time until synthetics drove them off the market and they had to shut down. They told me that the commercial price, for sapphires at that time was 35c per carat and they ran all the way from 1/3 carat and smaller to 22 carats up.

"To find sapphires you have to find virgin ground, so you look for an old tree stump and start digging. First you try to find bed rock which in this case was about two inches of pea gravel on top of some sticky clay. Now you are ready to find sapphires. Just dig some of this gravel and run it through a screen so as to get a'l gravel about pea size, being careful to look your big gravel over for large stones or gold specimens. We would screen a five gallon can full of gravel and in screening this would some time find 4 or 5 stones from 2 to 6 carats in size. Taking our can of gravel to the creek we would wash it and sometimes we would find as high as 15 smaller stones. If you used a gold pan you could see a little color in the tailing in the pan behind the sapphires.

"About 12:30 we went to the truck for coffee and lunch and then back up the hill for more sapphires. We worked until we all were good and tired. After looking over what we had in sapphires we decided we had done alright, probably each one of us had over 200 stones apiece. We went back the next day and did as well or better as we were now experienced at the screening process.

"Saturday morning, thanking our kind friends, Mr. and Mrs. Hughes, for everything we started home happy with the thought that most of the sapphires we had, were of our own hunting."

NEBRASKA — Diatomaceous earth, a variety of opal, occurs as a deposit of several acres near Thetford, Thomas Co., Nebr.

NEVADA — Nice specimens of apple green earthly annabergite with white dickite have been found in Cottonwood Canyon, Churchill Co., Nev.

NEW HAMPSHIRE—Wallace Knapp, 60 South St., Rhinebeck, N. Y., made a 7-day collecting trip to New England last July and brought back with him a large amount of trading material. One locality stopped at was the Palermo Quarry at North Groton, Grafton Co., N. H., where some very nice specimens were found of grayish cleavable triphylite, coated with bluish vivianite.

NEW JERSEY — Some interesting specimens of molybdenite have been received from Walter Busch of the Rare Metals Co., 43-32 Elbertson St., Elmhurst 73, N. Y. The molybdenite occurs as small flakes in grayish soapstone. A letter, dated June 11, 1952, from Mr. Busch gives information on the locality.

"I found the specimens on the dumps of the Royal Green Marble quarries about

2 miles from Harmony, Warren Co., N. J., and almost on the shore of the Delaware River. The molybdenite occurs in such quantity that it can almost be classed as a molybdenum mine. No collecting can be done in the quarries without the company's permission, but they dump the gangue (molybdenite) a short distance away and collecting can be done there and it is a Mecca for anyone looking for specimens of New Jersey molybdenite."

The Royal Green Marble quarry is a serpentine quarry once known as the Rock Products Company quarry. It was mentioned in Jan.-Feb., 1952 (p.35) and May-June, 1952 (p.254) R & M. It can also be located 2 miles north of Phillipsburg, N. J.

J. Kent Perry, RD No. 1, White House Station, N. J., sends in a correction as follows:

"The word torbernite appears in my note about the serpentine quarry (Royal Green Marble quarry) at Phillipsburg, N. J., published in the May-June, 1952, R. & M., p. 254. The mineral found was thorianite. Sorry about the mistake.

"I was thinking of the torbernite I found here in Hunterdon County. Guess I just had it on my mind.

Raymond Conover, Stone Ridge, N. Y., has sent in a clipping from the Fri. June 13, 1952, NEW YORK HERALD TRIBUNE (New York City). The clipping states that a famous old iron mine in the Ramapo Mts. of northern New Jersey has been reopened. This is the Peters Mine at Ringwood in Passaic County which has been shut down for a number of years. The ore of the mine is magneite but over 25 different minerals have been found in it.

NEW MEXICO — Another correction has been brought to our attention as per the following item, dated July 8, 1952, from Walt Wright, Adobe Crafters, Rt. 2, Box 341, Sante Fe, N. Mex.

"In your March-April 1952 issue of R & M, it is noted that you list carnotite for Grants, Valencia Co., N. Mex. (p141). While there may be a little carnotite at the Haystack Mountain location, it is pointed out that the principal uranium ore is really tyuyamunite. The two minerals are quite similar in appearance, both being a bright canary yellow, but while carnotite is a potassium uranium vanadate, the tyuyamunite is a calcium uranium vanadate. Also while the former is commonly associated with sandstone, the latter occurs in the limestone. Tyuyamunite is not a common mineral; in this country it has only been found sparingly in Colorado, and Utah, (and now in New Mexico). It takes its name from a hill in Russian Turkestan where it was first found.

NEW YORK — Quartz crystals are always interesting but none more so than the colorless transparent "diamonds" found around Little Falls, Herkimer Co., N. Y. A new locality for these lovely crystals is a matter of much importance to collectors. It is a pleasure, therefore, to print the following letter, dated July 17, 1952, which comes from J. William Palmer, Amsterdam Hotel, Amsterdam, N. Y.

"The article by Claude A. Smith in the May-June, 1952 edition of R & M was very interesting, I have hunted for the Little Falls "diamonds" in most of the places he mentioned in his article; however, for the benefit of readers of your valued magazine I strongly recommend the territory north of the Big Nose at Yosts in Montgomery County, N. Y. An easy way to reach it would be to turn right a half-mile west of Fonda off Route 5. The local name is Hickory Hill Road. Follow this straight ahead for about 4 miles, you then come to a gravel road (Barker Road), park the car and start hunting. You can always find good crystals at the junction of the Barker and Hickory Hill Roads, the northwest corner, (the altitude here is 800 feet), also the fields north of this place, on both sides of Barker Road are very good, especially after the fall ploughing.

"My friend, Mr. Clarence Van Derveer, who lives near here, has collected an estimated thirty thousand crystals of gem quality. We both agree Montgomery Co. is tops for crystal hunters."

NORTH CAROLINA — One of our good friends in the South, who keeps us posted on mineral localities, is William M. Johnson, RFD 6, Knoxville, Tenn. His letter dated Aug. 5, 1952, tells us of his recent trip to North Carolina.—

"On Sunday the family took a trip to Webster, Jackson Co., N. C. where the Olivine Products Corporation is putting down a shaft on their property to develop their nickel prospect. Several trenches have been cut thru the property to show the exposures of the dunite. The nickel seems to be on the inner edge of a ring formation which is about eight miles long and five miles wide. The sides of the ring are about a quarter to a half-mile wide. The nickel is in part of the material and it is called Websterite but considerable is found in a soft mucky, mica mixture. The shaft is down about 50 feet and they seem to be pleased with the results so far.

"At spots in the shaft there is a considerable amount of bronzite. Some of it is 1" x 2" x 3" and seems to be solid enough to polish. It is a dark bronze color and may develop into a stone like tiger's eye."

NORTH DAKOTA—Some nice specimens of petrified wood have been received from S. T. Parke, Sterling, N. D. Two of these have come from an area between Haynes and Hettinger, Adams Co., N. D. One is a very nice jasperized wood consisting chiefly of brown jasper (with some red jasper). The other is a thin slab whose interior is a dark gray (almost black) chalcedony while the thin exterior is brown jasper. Under the long wave light the chalcedony fluoresces orange.

OHIO — R & M is most fortunate in having 4 active collectors in Ohio who are continually sending in notes. These collectors are C. O. Gettings and Vernon D. Richmond, both of Toledo; Eugene A. Kindt of Put-in-Bay, and E. H. Sarles of Norwood. To this list is added another, Michael Schaer, RFD 1, Worthington, Ohio. A recent letter from Mr. Schaer is the following:

"I am sending you a few Ohio minerals that you might be interested in for your World News On Mineral Occurrences.

"The cone-in-cones, (four of them), are from two different localities; each under a different label. The two largest ones came from the Little Copperas Mountain, in central Ross County. This mountain gets its name from the mineral it is noted for. The mineral is copperas (melanterite), which is found in white crusts on the shale. The other two specimens came from a small creek bed just about 1,000 yds. west of Flint, Franklin Co., Ohio. All cones are gray in color.

"The other specimens are: ½ of a white gypsum nodule from a gypsum mine dump on Lake Erie, near Gypsum, Ottawa Co., Ohio; small brassy yellow marcasite xls on massive marcasite from the Permian shale just below the cone-in-cone locality at Flint, Franklin Co., Ohio; pale brownish coarse xline calcite on dark gray limestone from the Sugar Creek quarry near Greenville, Darke Co., Ohio (the calcite fluoresces yellow under the long wave light); and cellular xline white calcite from a large limestone concretion found in Round Stone Hollow, Camp Mary Orton, Flint, Franklin Co., Ohio. (This calcite fluoresces beautifully —bright pink and yellow—under the long wave light)".

A letter dated Aug. 9, 1952, comes from C. O. Gettings, 2001 Starr Ave., Toledo 5, Ohio.

"The calcite xl sent you (pale brown 1" xl on gray limestone) is from Lucky, Wood Co., Ohio. During the war the Government set up a huge plant for the purpose of refining pure magnesium from the limestone quarried there.

"Recently I visited Flint (Franklin Co.) Ohio, just north of Columbus. Here we found celestite xls in rhodonite (?) on chert. This is a continuation of the flint deposit of Flint Ridge of Licking County, Ohio."

Two more specimens have been received from Eugene A. Kindt, Box 70, Put-in-

Bay, Ottawa Co., Ohio. Both specimens are from Put-in-Bay on South-Bass Island in Lake Erie. The specimens are:—

Barite: Group of small xl aggregates white in color but weather brown. Tiny colorless calcite xls are attached. A thin grayish xline crust on some of the calcite xls and which is believed to be dolomite fluoresces a bright brown under the long wave light.

Calcite: Group of small gray xls on grayish limestone. Isolated loose xls, ¾" long, are doubly terminated. The tips of the xls fluoresce pale brown under the long wave light.

OKLAHOMA — Tripoli, a porus siliceous rock resulting from the decomposition of siliceous limestone, has been mined near Peoria, Ottawa Co., Okla. It is used as a polishing powder, as a wood and paint filler, etc.

OREGON — Celestite has been found in the Alameda Mine, Galice district, Josephine Co., Ore.

PENNSYLVANIA — A letter, dated May 31, 1952, has been received from Howard V. Hamilton, 187A Franklin Ave., Vandergrift, Pa. It reads:—

"Late Saturday afternoon we stopped at a quarry in Snyder County, Pa., for a few minerals. It is limestone with a little calcite and a few spots fluorite. We found some odd "balls" of aragonite. The largest one is about 3 inches in diameter. I broke a smaller one and it showed typical radiating aragonite structure."

A later letter, dated Aug. 2, 1952, gives more information.

"The Snyder County locality you asked about is the quarry of the J. C. Stahl Estate, in Helderberg (Devonian) limestone on Benfer's Ridge, about 1 mile west of the village of Paxtonville. The limestone is gray to black and of good quality. Some fluorite is associated with calcite in occasional veins that cut the rock. The aragonite was noted as rounded masses (balls) 3" to 4" in diameter and radiating in structure similar to a stalactite. The aragonite is yellow-brown in color with some crystal terminations visible. They fluoresce a light greenish with some phosphorescence."

Another letter has been received from Robert L. Cox, 228 Elk Creek Ave., Girard (Erie Co.), Penn. It is dated Aug. 25, 1952, and reads as follows:

"I am writing to report the results of further investigation of the cone-in-cone area near Girard, about which I wrote you in May. (See July-Aug. 1952, R & M, p. 364).

"On August 23, 1952, by brother, myself, and a friend made another trip up Elk Creek to the area where the cones are found. This time to our surprise we found conditions to be quite changed. At this particular place along the creek there are 60 foot banks of a very loose soft shale.

"These cliffs have weathered the most this summer than they ever have in my memory. There have been deep cuts made in the banks. In many places the shale overhangs in huge chunks which are very apt to slide down the cliff. As proof of this we found where one slide had occurred. We looked the pile of shale over carefully and found some interesting specimens. The plates of shale are coated with what appears to be an iron mineral as it is red. On this coating we found a coating of long thin xls matted together in criss-cross groups. The xls are transparent and remind me of celestite.

"I am sending you a specimen of this material for positive identification.

"Number two discovery concerned the cone-in-cones. The weathering had exposed the cone-in-cones *In The Bank.*

"This was the first time we had been able to locate them in the bank. Previously we had found them only in the creek bed. This confirmed my belief that the cones were formed at this place on the creek.

"We located two separate veins of the cones. One vein is approximately 30 feet up the bank, while this second vein is about 5 feet up the bank.

"I climbed up the bank to the 30 foot vein to be sure that it was cones. It was

but I slipped and had a rather disturbing 25 foot slide down the bank. Fortunately I was only shaken up, total injuries amounting to few nicks on my hands from sliding over the sharp pieces of loose shale. I strongly advise against anyone trying to climb that bank.

"It was a little ways farther up the creek that we found the second lower vein. We followed the vein and studied it for a couple hundred feet. In some places there are as many as 5 distinct layers in this lower vein. Other places it is all in one solid layer.

"I hope the specimens showing the thin xls sent you many turn out to be interesting minerals. As far as I know, these are the first specimens of xled minerals to be found in this area."

The tiny unknown, colorless transparent xls all turn out to be selenite, a variety of gypsum. The xls have formed in joints of the bluish-gray shale; the joints are coated with a brown to red iron stain and xls are found only on the stained surface.

RHODE ISLAND — A small but nice deep red jasper, one face polished, has been donated to R. & M. by Donald S. Wrathall, 47 Common St., Providence 8, R. I. The jasper comes from the State's famous locality, Diamond Hill, Providence Co., R. I.

SOUTH CAROLINA — William M. Johnson, R.F.D. 6, Knoxville, Tenn., has sent in a list of minerals found at the Haile Gold mine in Lancaster Co., S. C. (situated 3 miles northeast of Kershaw, Kershaw Co.). The ore carries native gold, pyrite, pyrrhotite and arsenopyrite. Other minerals present, so Mr. Johnson informs us, are sulfur, molybdenite, rutile, siderite, apatite, biotite, sphalerite, and a feldspar.

SOUTH DAKOTA — A news item from W. L. Roberts, Rise Building, Rapid City, S. D., is found in his letter dated July 26, 1952.

"I have a short item for World News on Mineral Occurrences. Very fine specimens of stannite are again being found in the Etta pegmatite mine at Keystone (Pennington Co.), S. D. It is the first that has come out since the 1890's. It occurs in masses up to a pound in weight in milky quartz. (only American locality).

"Will try to keep you posted on new finds from around here."

A second letter, dated Aug. 11, 1952, from Mr. Roberts tells us:

"My wife, Jean, and I have been doing quite a bit of collecting during the last couple of weeks; the finest specimen we obtained was a very lovely green spodumene from the Etta mine."

TENNESSEE — William M. Johnson, R F D 6, Knoxville, Tenn., sends in another item, this one on his native state. It is as follow:

"Wayne County, in southern Tennessee, is just east of where the Tennessee River comes back into Tennessee on its way north from Alabama. The rock is all of sedimentary origin. Its mineral resources are limestone, flint, millstone materials, manganese ore, cement rock, clays, gravel, sand and brown iron ores. Many thousands of tons of brown iron ores have been used in local furnaces and also shipped to Alabama.

"The brown iron ores include hematite, turgite, goethite, limonite and xanthosiderite, Wad, a soft impure oxide of manganese, is found in small quantities. At few points small amounts of cobalt have been reported. The iron phosphate minerals, beraunite, cacoxenite and strengite have been found in boulders of chert breccia.

"Limonite has been mined in Wayne County at Allens Creek, Ferro, Iron City, Pinkney, Riverside, and West Point."

TEXAS — H. B. Smith, 2349 Butternut, Abilene, Texas, has sent R & M some interesting specimens. They are from the Polk farm, 12½ miles northeast of Mason, Mason Co., Texas. One is a white cleavable calcite. The others are all smoky quartz—two are loose xls and two are xled groups. Half of each loose xl has a thin crust of dark red hematite on its surface; the xled groups have a thicker

crust of dark red hematite. The larger group is almost encircled by a secondary growth of smoky quartz. These quartz xls come from Crystal Hill, a slight knoll or incline covering about 20 acres. Crystal Hill is on the Polk farm.

One more specimen was received from Mr. Smith. It is a nice cleavable mass of calcite, translucent and colorless, which comes from a road cut 10 miles southwest of Abilene on right of highway, Texas 158.

UTAH — Nice glassy colorless xls of aragonite, with lemon-yellow wulfenite xls, have come from the Tecoma lead-silver mine near Tecoma, Box Elder Co., Utah.

VERMONT — Wallace Knapp, 60 South St., Rhinebeck, N. Y., who made a 7-day collecting trip to New England last July stopped at the following localities in Vermont and obtained:—

Chester (Windsor Co.): Pyrite xls, magnetite xls, steatite, clinochlore, prochlorite, foliated talc, actinolite xls. These were collected at the old talc mine.

Gassetts (Windsor Co.): Clinozoisite (brown xle in white pegmatite). This came from a large boulder.

Gassetts is a noted garnet locality but the clinozoisite, apparently, was not found at the garnet mine.

VIRGINIA — Miss Helen MacLeod, 4826 Butterworth Pl., N.W., Washington 16, D. C., sent in the following item:—

"In the road cuts between Basye and Orkney Springs (both in Shenendoah Co.) Va., the dark red sandstone (?) erodes and cracks up exposing sharp, positive and negative, casts of prehistoric sea shells. There are quantities of these fossils and each spring opens up the rock a little more. Breaking a piece of the rock frequently exposes more fossils. The size of the shells is approximately ½ inch. The rock breaks readily but is firm enough for good specimens. There is probably no use asking directions when you get there as the natives pay no attention to the little fossils. Just walk along the road and look".

WASHINGTON — Some few months ago we received from G. F. Fales, Cashmere, Wash., a nice specimen of native gold, xline in massive milky quartz. The specimen came from the Bobtail claim, Blewett, Chelan Co., Wash.

WEST VIRGINIA — A dark red mass of hematite has been sent R & M by F. W. James, 923-32nd St., Parkersburg, W. Va. The locality for the hematite is Volcano, Wood Co., W. Va.

WISCONSIN — At the Mid-West Convention held at Macalester College in St. Paul, Minn., July 1-3, 1952, we ran into H. R. Straight of 1306 Main St., Adel, Iowa. Mr. Straight told us of an interesting occurrence of leopard sandstone.

This leopard sandstone is found near Alma Center, Jackson Co., Wisc. It is very dark brown in color and is found in tubular form—the tubes not exactly round but more or less flat. Mr. F. C. Brown of Eagle Grove, Iowa, collected it.

WYOMING — From Oliver A. Mason, 319-26th St., Ogden, Utah, we not only received an assortment of fossil fish but also the following interesting letter, dated July 7, 1952:—

"Am enclosing a copy from the road sign at Fossil, Wyo., that I made July 4th. A rockhound friend took me up as he had never been there and having seen my fine fossil fish that I secured in 1950, was very anxious to go. Had poor luck this time and secured only a few from 1 inch to 3 inches.

"It is 13 miles west of Kemmerer, Wyo. on Highway 30 north. Fossil Ry. Station is south of the highway about one-half mile.

"The old museum is on the north side next to highway and in rear of it are 2 box-car houses with open shed on east end. The place is easily recognized as it has been abandoned for years and is pretty well wrecked. One can camp there but nearest water is at Fossil station.

"The Butte runs east and west and we worked on the north end at top of the

Butte in the Green River formation.

"It is a long hard climb up the north end and I would advise most people to go west on the highway to the Butte marker, turn right (north) on dirt road, which is a winding one, and it will take you right to the foot of the Butte where they quarried for fossils. One will notice where they are by the waste slides and holes in the cliff. There is a v-shaped shanty where the quarrymen used to stay. No water. As soon as I can get my few fish cleaned up will send you one so you can have a sample.

"There is a water tank at the Fossil station but chemically treated for the Ry. engines. Their water is hauled in for household use but one can get fine spring water there as they have a hand pump in the spring. The pump has to be primed. Takes me back to boyhood days on the farm in Wisconsin. I will be 74 years young next Dec. 4th.

"The following is from the sign at Fossil Butte.

FOSSIL BUTTE, WYOMING. Fossil Butte is world famous for perfectly preserved fassil fish. The deposits were worked as early as 1877.

There are specimens from this locality in museums all over the world. The rocks in the butte were laid down about 50 million years ago. Red rocks in the lower part are stream deposits named Knight Formation. Light colored beds in the upper part are of the Green River formation are a remnant of beds deposited in the lake once covering much of Western Wyoming.

The fish bearing layer and quarries are about half way up the butte. The Green River formation has yielded a great many varieties of fossil fish, including herring, perch, cat fish, and Sting ray as well as fossil insects, birds, and a bat."

A second letter, dated Aug. 13, 1952, came from Mr. Mason. Part of it reads:

"Have finally gotten around to pack the specimens I promised you from the Fossil, Wyo., fossil fish trap. Luck was poor as the big ones were not bitting but some little ones did. Am enclosing also an artistic slab just as it came from the cliff as it shows the layers beautifully."

A number of thin slabs were received. They are all buff-colored friable limestones—one slab, 1x4x1½ inch thick shows beautifully a fossil fish 2½ inches in length and of a dark brown color.

The artistic slab 4 x 6 x 1 inch thick at its widest edge, is a beautifully thin banded light and very dark gray limestone.

Fossil, Wyo., is in the southwestern part of the state, in southern Lincoln County.

ALASKA — William Freiter, 210 E. 2nd Ave., Anchorage, Alaska, sent in an interesting specimen which he collected ½ mile north of his city. It is a dark smoky quartz mass containing tiny striated pyrite cubes.

AUSTRALIA — Beautiful specimens of azurite have been found in the copper mines at Burra Burra, South Australia.

AUSTRIA — Very good specimens of mountain wood, a dark brown "woody" mass of amphibole, have been found at Sterzing, Tyrol, Austria.

BRAZIL — Very nice specimens of scorodite, as small bluish-green xls on a dark brown schistose rock, have come from the noted Morro Velho gold mine at Nova Lima, Minas Geraes, Brazil.

CANADA — Nice dark green xls of beryl imbedded in flesh-colored microcline have been found at Quadville, Ont., Canada.

CHILE — Some of the nicest atacamite known, green fibrous masses, have been found in the copper mines at Chuquicamata, Antofagasta Prov., Chile.

CUBA — Beautiful xls and xL groups of amber colored selenite (gypsum) have been found at Guasabacoa, Havana Prov., Cuba.

EGYPT — Pale green xls of aquamarine in milky quartz have been found on Gebel Zabara, Egypt.

ENGLAND — Very nice specimens of bournonite, as small black lustrous xls with xled rock xls, have been found in the Herodsfoot copper mine at Liskeard, Cornwall, England.

FINLAND — Dark brown xls of cassiterite with calcite, chalcopyrite, and pyrite have been found at Pitkaranta, Finland.

GERMANY — Small colorless xls of boracite have been found in Eime, Hannover, Germany.

GREECE — The principal deposits of iron ore in Greece are found on Seriphos Island, one of the Cyclades in the Aegean Sea. John J. Lavranos, formerly of Athens, Greece, but now on his way to South Africa, we believe, sent us 3 specimens from the iron deposits on Seriphos. One is a dark brown massive limonite; another is a cellular light brown limonite whose cavities are encrusted with colorless drusy quartz (several cavities with xline white calcite); also a massive black magnetite.

HAITI — We heard that one of our subscribers, Joseph A. Schraut, Jr., of St. Louis 16, Mo., had made a trip to Haiti, in the Carribbean Sea. His reply dated July 14, 1952, to our inquiry is below:

"Yes, I have recently returned from a consulting engineering and geological trip to the Island Republic of Haiti. My trip had very little to do with minerals, however, I did do some looking up and talking with mining engineers who are working and developing the country's mineral deposits.

"The following list is what I saw and compiled from my talks mentioned above. If I have time I will throw together a small article and send it to your publication.

"Limonite, Magnetite, Specularite, native Copper, Cuprite, Chrysocolla, Chalcocite, Bornite, Chalcopyrite, Covellite, Malachite, Azurite, Manganese Wad, Galena, Sphalerite, native Silver and Gold, Platinum and Iridosmium, native Mercury and Cinnabar, Chromite, Lignite, Bauxite, Kaolinite, Gibbsite, Chalcedony, Jasper, Halite and various other mineral salts from the inland, lower-than-sea-level lakes, Calcite, Hornblende, Grossularite, Andradite, Epidote, Chlorite Nontronite, Milky Quartz, Apatite, Titanite, Pyrite are the list as far as minerals go.

"Reynolds Aluminum Co. is developing a large bauxite deposit in the south and various copper companies both stateside and Haitian are developing the copper deposits in the north at Riveire du Nord and the Mem' Valley.

"Opaline flints are hand-quarried from chalks and cut and polished. I believe that they are the Haitian black opals which bring such high prices stateside. The gold occurs both disseminated thruout the various orebodies but can be panned at the border between Haiti and the Dominican Republic in the Riveire Massac. Clay, shales and sometimes marls are used by the natives to make pottery and pipes.

"Specimens from the copper ores are very showy. They will have on one handspeciman: native copper, cuprite, chalcocite, malachite, azurite, limonite or hematite, and sometimes chrysocolla, covellite, and bornite, making quite a showy collection."

IRELAND — Pale green talc has been found near the Giant's Causeway, Co. Antrim, Ireland.

ITALY — Small ,sharp, colorless, transparent xls of epidesmine with small brown chabazite xls on gray schist, have been found in Val Varenne (Pegli), Liguria, Italy.

JAPAN — Prof. Keiichi Omori, Tohoku University, Mineralogical Institute, Sendai, Japan, very kindly sent R & M a copy of his two papers. One is "A new find of gypsum from the Matsuo sulphur mine, Iwate Prefecture," by Keiichi Omori and Jun-ichi Kitahara, pp .93-96. From the paper we learn:

"The Matsuo sulphur mine, one of the

largest of its kind in Japan, lies about 30 km. (18½ miles) northwest of Morioka City in Iwate Prefecture (Honshu Island, Japan), and at an elevation of about 1,000 m (about 3,280 ft.) above sea level. There are three important deposits in the mine and are named the first, the second, and the third. Sulphur and pyrite are being mined from the first deposit at present.

"In 1950, gypsum was found for the first time in the lowest adit of the first deposit by Toshiaki Suzuki, Geologist of the Matsuo Mine; the crystals were kindly forwarded to the writer for examination. According to his information, thin alunite, opal and clay bed, and propylite and pyroxene andesite distribute respectively in the order given from upper to lower below the ore zones. The gypsum crystals were found in cavities of the green colored waxy clay filling the fissures, which cut through the clay bed and propylite. The small number of cavities makes it rare to find the crystals of gypsum." (p.93). "Gypsum crystals from this mine are colorless and transparent with pearly luster on perfect cleavage." (p.94).

The second paper, "Hausmannite and Tephroite from Himegamori, Iwate Prefecture," by Keiichi Omori, Shuzo Hasegawa, and Jun Otomo, pp.97-102. The following paragraphs are taken from the paper:

"During the writers' geological survey of an area on the eastern sea coast in Iwate Prefecture during the summer of 1951, one of them (Otomo) collected some specimens of dark colored minerals from a manganese deposit in Himegamori, Karumai village. Microscopical and chemical studies in the Institute proved the black colored one to be hausmannite and the gray colored one to be tephroite. These two minerals are rare in Japan.

"Himegamori is a hill with an elevation of 469.3 meters (1540 ft.) above sea level, and is situated in Karumai, a village about 20 kilometers (12½ miles) northwest of Kujitown." (p.97).

Both papers (in English) are reprinted from the Science Reports of the Tohaku University, Sendai, Japan (February, 1952),

MEXICO — Nice specimens of calcite onyx (white with brown veins) come from Rosario, Lower California, Mexico. This onyx takes a beautiful polish.

PHILIPPINES — A nice specimen of botryoidal black psilomelane was donated recently to R. & M. by G. H. Haldén, 270 Lewis Ave., Millbrae, Calif. The locality is a manganese deposit near Jose' Panganiban, Camarines Norte, Southern Luzon Island, Philippines. Mr. Haldén personally collected the specimen as he had spent many years in the Philippines.

SCOTLAND — Colorless xls of cerussite have been found in the Leadhills, Lanarkshire, Scotland.

SOUTH AFRICA — Nice grayish masses of chalcedony occur on the Schenenegan farm near Nylstroom, West Transvaal, South Africa. The locality was visited in 1951 by Dr. Claude H. Barlow, Box 54, Trumansburg, N. Y., while working on a scientific project in South Africa.

UGANDA — Some interesting black xL fragments of ilmenite from Labwor, Karamoja, Uganda, East Africa, have been donated to R & M by John S. Albanese, P.O. Box 536, Newark 1, N. J.

PEBBLE PUPPIES

His pockets and his sacks are full,
His feet and voice are tireless;
He strays so far from hunting grounds
The sponsor needs a wireless.
He covers every path three times—
Just like a leaping terrier—
His happy squeals and "Look at mine!"
Make all the old hounds merrier
He startles all his playmates
With sentences long and wordy;
He learns big words and thinks big thoughts,
Grows brown and lean and sturdy.

Olive McHugh
1811 East Ninth South
Salt Lake City, 5, Utah

MINERAL SHOPPER'S GUIDE

Conducted by CHARLES A. THOMAS
706 Church Street, Royersford, Pa.

Advertisers are invited to send notes or samples of their products. This service is free.

A lot of water has dribbled from our chin since the last issue. Never have we experienced a hotter summer for collecting and visiting. By the time this issue is in your hands the weather should be ideal for more comfortable mineral activities. But, remember last winter? How we envied the western collectors when heavy snows and nippy days prevented out-door activities in the East and North.

It isn't too soon to think of Christmas. Dealers, too, have been active in assembling and gathering material for the winter sales. Busier than squirrels. One dealer in particular is especially proud of his loot from Mexican trips and other fine western collecting areas. Mr. Filer, whose ads appear regularly in these pages, sent us a most beautiful sample specimen of dioptase from a famous western locality. It is my favorite variety, being in the form of divergent slender blue-green needles against a white matrix. This is just one very appropriate item to think of for that Christmas present. We suggest that a close inspection of the ads in this issue is in order. If you really want to be a good Santa Clause, do not wrap up some beat-up old specimen from some mine dump or quarry unless, of course, it is really a world-beater.

Speaking of world - beaters, meaning super-duper elegant specimens, which you may have discovered on your trips far and near, or in your back yard, why not try selling them? It's fun, whether or not you need the money! Exchanges are fun, too . . . but fraught with worry and disappointments. Sometimes dealers will buy your specials in quantity and reorder sooner than you may think. Or advertise direct in these pages and have the fun of selling your best to those who often have nothing with which to exchange. Fine friendships are made both ways. We often recall to memory an exchange we received some years ago. After each specimen was unwrapped and all were spread out on a table, we marveled at the exceptional value of each piece. In our letter to the sender, we praised that exchange selection and asked for another exchange. The second was better than the first. We couldn't help but mention that such specimens should be saved for actual sale and not wasted on possible so-so exchanges. Today, the sender is now in a large and prosperous mineral-dealer business.

There are many dealers who believe in low - price - large - turnover policies. Such dealers are most energetic and are out to please as well as to get the business. Adobe Crafters of Santa Fe, N. M., is such a firm. Send for their list and note that only a few items hit the $5.00 mark.

We love fine fluorescents . . . the word is not misspelled. Fluorescence is always interesting if one has the proper lamps. Mr. Cleo C. Corley, Jr. sent us a beautiful specimen of hydrozincite with reddish fluorescent calcite. The two minerals in combination make an ideal display piece. Mr. Corley lives in Soccoro, New Mexico, and will have an ad in this issue. Watch for it. Thank you Mr. Corley, Jr. for sending this lovely specimen. A short wave lamp is required.

Speaking of fluorescence, we viewed several collections of Franklin minerals this summer. No matter when or where or what, a good Franklin collection, when viewed in the dark with a Mineralight short wave lamp or a good EH4 long wave, will be a thing to marvel at. There are always good and so-so minerals from Franklin, N. J., as well as anywhere else. The following stand out as worth mentioning: Barite in red-orange fluorescent calcite, a sufficiently different type of fluorescence in that the barite fluoresced a nice cream color against the red calcite (short wave); Wollastonite in superb specimens also with reddish calcite. The wollastonite is a most brilliant orange and in large areas; Margarosanite, a rare

mineral which reacts a lovely lavender to light blue, depending on the specimen (short wave); zinc blende, a honey colored specimen in daylight and a fine sphalerite orange under the EH4 with brilliant blue spots and a few brilliant lavender-pink spots which both show a sharp afterglow along with the very satisfactory afterglow of the zinc-blende, which is a deep red for a while after the lamp is turned off. The most remarkable Franklin specimen was very spectacular under the long wave EH4. Three specimens in all and large chunks with hickory nut sized pink corundum (pink ruby?) crystals plentifully distributed throughout the Matrix. The reaction is a most unbelievable signal red. Most, if not all of these, are specimens which may be bought from Ward's and Schortmann's. The wollastonite, mentioned in an earlier issue, was not brought out of the zinc mine by the ton, nor were any of the others just mentioned. Just a hint to get some through an order before it's too late.

Most of us know that the better specimens on dealers' and collectors' shelves were not found at old mine dumps or old quarries. However, who, among us, does not thrill to a new old mine dump or a new (to us) old quarry? Next summer, we hope to do what Mr. Frank Hankins, of Collegeville, Penn., did this summer. Frank reported a most enjoyable trip with a guide . . . a real honest-to-goodness rock-hound sniffer-outer. Mr. R. E. Januzzi, of Danbury, Conn., who knows his geology and his way around, was Frank's guide. We viewed the results of this trip and must say that most of the loot was worth considering for the display shelf. One never knows what may turn up. A word to the wise, don't expect wonders from old localities unless you are prepared to expend some effort. Specimens just do not loll around in plain sight waiting to be picked up. Mr. Januzzi, when time permits, advertises his services in ROCKS AND MINERALS.

Dealers and those who would like to try selling good material are still invited to send in small samples for examination. Self-help is the key word and it costs nothing but the postage. We often recognize rare and beautiful type minerals in lists and catalogs, but the best way to brag is to send in a sample of that new type to this column. We received our first gripe last month. A dealer, who had never sent us a list, wanted to know why we never once mentioned his establishment. So, we say, help yourself to the benefits of this department and we will do our best to spread the good word about new finds and new types of known minerals and such. For instance, there are many types of asbestus (asbestos, if you prefer), but we were thrilled with a small sample of a lovely silky golden yellow variety which was sent to us early this year by a western dealer who has continually made use of this department. The oft mentioned name of this dealer is not due to favoritism. We do not even know him, and may never meet him, but his self help and expended energy is commendable and he deserves credit. His business is successful!

We noted in Mr. Zodac's article that Mr. Sabin displayed his newly found cycad petrification and other nice discoveries from his area in Texas (R. & M., July-August 1952, p. 374). This Texan had sent us several slabs of this unique cycad. Cal Gettings polished a nice round cab for us (our new outfit is not yet ready). We had an idea Mrs. Cal did the actual finishing. The pattern of most cycad is lovely. The Sabin material is indeed a worthwhile find. Mr. Zodac's article represents a fine piece of reporting on the Canon City Mineral Convention, Colorado. Look up your last issue and read it again.

On page 411 of the last issue, you have probably drooled along with us when you read the ad presented by the Compton Rock Shop, of Compton, California. This enticing ad lists many beauties from Tiger, and Ray, Arizona and especially attractive tellurides from Colorado. We know this material well and have a feeling that there will be little left if one dallies too long in sending an order. Wish we could hop out there and see their cases of copper

minerals . . . especially the larger specimens of such items as wulfenite, cerussite, (lead carbonate) native copper with bright red cuprite attached, malachite and that exquisite Tiger dioptase. A microscopist would have much enjoyment in picking out other assocated crystals in this material. The Compton Rock Shop sent us six lovely thumbnail size pieces of the above which were immediately placed in our micro case.

Speaking of micros reminds us of some unique mounts seen in Ben Birchall's collection in Germantown Pa. Ben has the minutest crystals ever and mounted on individual hairs of spun glass, each hair with its crystal perched on top is mounted in individual plastic micro boxes. It is a lot of loving work but easy when you know how to pick up the tiny crystal on the glass hair tip. The plastic boxes are advertised by several dealers in ROCKS AND MINERALS.

We do not own the tiniest gastrolith in the world but we do have a smally mounted for micro study. It was sent in a package of gastroliths collected by Mr. B. J. Keys of Worland, Wyoming. The very peculiar polish on these small bird gizzard stones is perhaps as fine as any man can produce on like material. This tiny stone has a very high polish which the microscope shows is about perfect.

Mr. and Mrs. Karl Johnson of Jackson, Wyoming, sent us a lovely cab of Jackson Hole Country wood as well as a nice whole rough specimen of petrified wood. Some of the most interesting wood we ever collected personally, came from this very interesting part of Wyoming. Both the Johnsons and this department are experimenting with this find and we will have more to say later. Other fine polishing materials have been found in the "HOLE" country. The Johnsons are advertising Eden Valley Wood, an old timer, but there is always new wood to find and cut. Look up their ad.

Rare mineral specimens are often without beauty. However, two types of rare items were sent us by Mr. Carl Honaker of Athens, Tennessee. On is a rather beautiful type of needle aragonite (cave material) in which the needles are sharp and clear. The other is a rare mangano deposition of alum and iron called apjohnite. Old time specimens were taken from an old locality in Tennessee many years ago. Now, a new find of this material was made by Mr. Honaker.

We have an idea that West Virginia minerals are poorly represented in mineral collections. We are calling all West Virginia readers to tell us more about the mineral finds of this state. Write us if you have specimens to exchange or sell. We would greatly appreciate your cooperation. This department fell down badly in trying to locate a nice specimen from this state for Mr. C. V. Mills of Phoenix, Arizona. We are still trying.

A couple of years ago we read in these pages about a little New England girl who had become the youngest subscriber for ROCKS AND MINERALS. She now resides with her parents in King Of Prussia, Pa. Carol Triem is now but eight years old and is already an advanced collector and lives every minute for the study of minerals. Thanks to her understanding parents, Carol gets around and has visited us at our home. Carol is also a member of the Mineralogical Society of Pennsylvania.

Another up and coming mineral collector is James Irvine of Collegeville, Pa. His collection (for such a young fellow) will soon be the envy of many an old time collector. We could fill this page with names of youngsters who are growing and who have grown into adult advanced collectors. In some cases they are now working geologists. How we really envy them!

Arthur and Lucille Sanger are in the news again. How they find the time to preform all of those fine polishing materials is beyond our ability to fathom. They sent us a fine packet of exquisite preforms for cabs. According to their ad, these are only $3.50 for twelve expertly formed cab shapes, ready to sand and polish. To mention a few, there were ovals, rounds and triangular shapes of tiger eye, rose jasper, beautifully banded cave onyx, flowering obsidian, Pikes Peak amazon

stone, Brazilian banded agate and a lovely green moss agate. These polished beautifully. What a time saver. Sangers' ads will tell you all about it.

Men will never cease trying to fly. We know a man nearby who is an old hand at flying. He says it is thrilling but his arms get so tired . . . not from flying, but from lugging back all those nice specimens he buys from dealers all over the United States.

Men have also dreamed about getting to the Moon by one method or another. Suppose the Moon was a newcomer to our skies. There is no doubt that a great many scientists of all types would be more than ever anxious to make the short trip. Mineral collectors would either try to go along or await patiently for some dealer to get there and back with a load of petrified Moonbeams. But, here we are on Earth which is a very interesting planet and we actually do not know everything about it. There are specimens on dealers shelves just waiting to be known by you, personally, and odd stuff you have never dreamed existed. Get some dealers' catalogs and pick out a few, even if they are only the very cheapest representative pieces. Christmas is coming. Maybe a friend who says he has everything, would appreciate a packet of the unusual.

Speaking of Christmas and what to order for the wife, husband or friend, these pages are chock full of ideas. An outstanding gift such as "A Library of Gem Stones" marketed by Rudson-Wood Inc. of New York City, should be an ideal gift. This item is in the form of a book with actual gem stones, rough or polished, inserted in compartments, with adequate data concerning each stone.

We know that, as usual, when we send this 'script to Mr. Zodac, there will be a few communications from dealers who did not send data or samples soon enough to get in this department for this issue. Such late arrivals will be taken care of in the next issue following. We try to hold off as long as possible, giving Mr. Zodac just a few more grey hairs (not that a few more are less becoming).

If you have read all of the ads in the last issue you will know that Teofen Pyrcz is not a type of fossil but an up and coming Canadian dealer who can supply many Canadian minerals at moderate prices. This reminds us of a recent letter from Ottawa, Canada. Mr. Hugh S. Spence writes: (in part) "that the deposit from which the newer type (nonfibrous variety) wernerite has come, which you mentioned in your department, was found by a friend and myself some years ago." We know (unquote) that this material is still available from dealers which were supplied with this fine fluorescent material. The compact wernerite is most brilliant under any type of long wave U. V. lamp. Some of it, if not all, is also phosphorescent. We know of no other comparable fluorescent material. We could fill a page as to why we say this. This new wernerite is in short supply so get some from your favorite dealer . . . and dealer, if you do not have it stocked, write us and we will supply you with the name of the shipper.

There are many polishers in the East who are taking to faceting gem stones. However, there may be twice or three times as many westerners who have been at this type of lapidary work for quite some time. Those who contemplate buying a really fine faceting device should write for the Sapphire Faceting Unit folder. Many dealers are stocking this excellent unit. One in particular is the Valley Art Shoppe of Chatsworth, Calif. The folder pictures clearly with fine gloss photos, this fine instrument.

We note with interest that among the many fine crystals offered for sale by Mr. E. M. Gunnell, are groups of Cumberland fluorite and other fine specimens. The one that takes our eye is caledonite. When Mr. Gunnell says it is a fine specimen, be assured that indeed it is.

Sold Immediately!

Editor R. & M.:

Enclosed is my personal check for $3.00 covering a year's subscription for ROCKS AND MINERALS. Just saw my first copy and was sold immediately.

Ernest J. Necker
1900 W. Ainslie St.
Chicago 40, Illinois

August 6, 1952

THE SAND COLLECTOR

Conducted by PETER ZODAC, Peekskill, N. Y.

Items on interesting sands wanted. Please send them in.

Garnet Sand from Lompoc, Calif.

C. A. Noren, R3 Box 312, Fresno, Calif., spent R. & M. an interesting sand which comes from Lompoc, Santa Barbara Co., Calif. It is a dark red fine grained sand consisting chiefly of garnet (red, which gives the sand its color), with green epidote, black magnetite, colorless quartz, and colorless zircon (fluoresces orange under the Mineralight).

Beach Sand from Ft. Lauderdale, Fla.

Through the efforts of Rev. William J. Frazer, 625 Main St., Moosic 7, Penn., a nice sample of beach sand was received which was collected on the beach at Fort Lauderdale, Broward Co., Fla. This is a mottled brownish-white-gray coarse grained sand. It consists of fine grained colorless quartz and sea shells which vary from tiny up to ¼ inch in length. The shells are all highly polished (by water) and rounded; some are white, brown, gray while a few are mottled brown and white. The sand was collected by Fred McMurtrie, 20 Wall St., Fort Lauderdale, Fla. Fort Lauderdale is a little city in S.E. Florida and on the Atlantic Ocean.

Magnetite Sand from Lake Forest, Ill.

The following note dated Aug. 7, 1952, was received from Miss Gertrude M. Hannen, 1039 Hollywood Ave., Chicago 40, Illinois:

"Am sending you a small bottle of magnetite sand found on a small Lake Michigan beach in Lake Forest (Lake Co.), Illinois. There was only a small strip of this thick black sand the day we were there."

This is a medium grained black sand consisting almost entirely of black magnetite, with small amounts of pinkish garnet, colorless quartz, and a few grains of colorless zircon that fluoresces orange under the Mineralight.

River Sand from St. Louis, Mo.

We received from Roger Maserang, Box 395, R.R.1, East Carondelet, Ill., a nice sand sample and the following note, dated August 7, 1952:

"Enclosed under separate cover is a sample of Mississippi River sand from St. Louis, Mo. This sand was pumped out of the river by the Mississippi River Sand and Material Company of St. Louis."

This is a coarse grained dark grayish-brown sand consisting almost entirely of quartz (colorless, smoky, brownish; brownish agate; grayish chalcedony of which some is "moonstone"). A few grains of black magnetite also seen. The sand grains are all rounded and nicely water-polished.

Olivine Sand from near Spruce Pine, N. C.

Homer A. Davis, 524 Putnam Ave., Cambridge 39, Mass., has donated an interesting sand to R. & M. This is a fine to coarse grained, light greenish glassy sand made up entirely of olivine. Some of the olivine is stained brown; some of the pale green grains are transparent. The sand comes from a locality about 20 miles S.E. of Spruce Pine, Mitchell Co., N. C.

Quartz Sand from Bismarck, N. D.

S. T. Parke, Sterling, N. D., has sent in a sample of sand which he collected from the Wachter pit in Bismarck, Burleigh Co., N. D. It is a coarse grained dark gray sand consisting chiefly of quartz (colorless, smoky, white, brown, reddish; also grayish chalcedony—the chalcedony fluoresces orange under the long wave lamp). Other minerals seen were pink garnet, black ilmenite, brown limonite, silvery muscovite; also dark gray sandstone.

Beach Sand from Mentor, Ohio

This is a dark red fine grained sand. It consists chiefly of red and pink garnet

and black magnetite with minor amounts of colorless quartz and pale brownish zircon (fluoresces bright orange under the Mineralight). Mentor is a small town on Lake Erie in Lake County, Ohio. Donated by C. O. Gettings, 2001 Starr Ave., Toledo 5, Ohio.

Beach Sand from Put-in-Bay, Ohio

Put-in-Bay in Ottawa County, Ohio, on South Bass Island in Lake Erie, is a noted summer resort. From a subscriber, Eugene A. Kindt, Box 70, Put-in-Bay, Ohio, we have obtained a nice sample of beach sand from the locality. This is a fine grained dark red sand consisting chiefly of garnet (reddish to pinkish which give the sand its color), with small amounts of green epidote, black magnetite, colorless to smoky quartz, and colorless zircon that fluoresces orange under the Mineralight.

Quartz Sand from Utah

About a year ago C. M. Allen of Bay House, Pembroke, Bermuda, made a trip west and while so doing took time out to collect a sample of sand for us. This sample is a medium grained, reddish-brown sand—all quartz (some grains are colorless to white). The locality is along route U. S. 89 in Utah between Mt. Carmel Jct. and Kanab in Kane County.

Creek Sand from West Virginia

This is a dark brown coarse sand consisting of smoky quartz, red hematite, brown limonite, black magnetite, and sandstone (gray, red, brown). Almost all sandstone grains contain tiny silvery flakes of muscovite imbedded in them. The sand was donated by F. W. James, 923 — 32nd St., Parkersburg, W. Va. "A small amount of sand from Bull Creek, Pleasants Co., below Boiling Springs, W. Va.," reads a paragraph in his letter dated May 11, 1952.

Volcanic Dust from Antarctica

Here is an interesting "sand" that was donated to R. & M. by Thomas A. Oleszkowicz, 6969 Parkwood Ave., Detroit 10, Mich. It is a dark brownish-black, coarse to fine grained lava with tiny amounts of black magnetite. The locality is Mt. Erebus on Ross Island in McMurdo Sound, Antarctica. Collected on Jan. 29, 1948, apparently by M. L. Peterson, 933 North Longfellow, Arlington, Va., who in the March-April, 1952, R. & M., had a most interesting article "Rock collecting in the Antarctic," pp.115-126.

Beach Sand from Isle of Pines, Cuba

About a year ago, while on a visit to Chicago, the conductor of this column was presented with a nice sample of most interesting sand by Frank MacFall, 630 Greenleaf Ave., Wilmette, Ill. The sand had been personally collected by Mr. MacFall from Bibijagua Beach, Isle of Pines, Cuba.

This is a black and white medium grained sand consisting chiefly of black hornblende and colorless quartz. Some red garnet grains also present. The sand is odd in that its grains are not rounded but are chiefly elongated, and especially those of hornblende.

"The Isle of Pines is dotted with the bungalows of American settlers. In the winter the American colony is swelled by many visitors from the United States, who amuse themselves by bathing off the delightful beaches of Nueva Gerona and Bibijagua, by motoring over the excellent roads, and by boating on the Casas River." —Pocket Guide to the West Indies, by Sir Algernon Aspinall (Chemical Pub. Co., New York, N. Y., 1942), p.370.

Nueva Gerona, the capital city of the Isle of Pines, on the Rio Casas, is in the northern part of the island. Bibijagua Beach is about 10 miles to the northwest of Nueva Gerona on the Caribbean Sea.

Beach Sand from Yorkshire, England

Saltburn-by-sea in Yorkshire, England, is a noted seaside resort on the North Sea. From its large beach we received a sample of sand that was collected by Miss Eva Bayne, 19 The Chine, Saltburn-by Sea, Yorkshire, England, for Rev. Wm. J. Frazer, 625 Main St., Moosic 7, Penn., who in turn sent it to R. & M. This is a fine grained dark gray sand consisting chiefly of quartz (smoky, milky, colorless, brown) with a little black magnetite.

Beach Sand from Poros Island, Greece

Poros Island, in the Gulf of Aegina, is off the east coast of the mainland of

Greece. It is one of the prettiest places in Greece and a favorite summer resort. From one of its beaches we have received a small sample of sand that was sent in by John L. Lavranos, Athens Greece.

The sand from Poros Island is dark gray, fine to coarse grained, and consists chiefly of quartz (white, brown, reddish, smoky) with broken sea shells.

In his letter dated August 5, 1952, Mr. Lavranos writes: "I expect to leave for South Africa at the end of this month so please hold everything until you hear from me again and learn my new address."

Beach Sand from Wakayama, Japan

Not long ago Mrs. Grace Beckwith, 67 Dana St., Cambridge 38, Mass., donated to R. & M. an interesting sample of beach sand from Wakayama, Japan. This is a coarse grained gray sand consisting of basanite (black), chalcedony (gray), milky quartz, smoky quartz, etc.

Wakayama, capital of Wakayama Prefecture, Honshu Island, is situated at the mouth of the Kino-kawa River which empties into the Inland Sea.

River Sand from Korea

On May 3, 1952, we received an assortment of ROCKS AND MINERALS from Cpl. Robert M. Strang, U. S. Army in Korea. Among the specimens was a sample of river sand from the Pukhangang River, south of Kumsong, Korea. This river is only about 75 feet wide and shallow.

The sand is dark gray, coarse grained, and consists chiefly of smoky quartz and grayish-black phyllite with minor amounts of black magnetite, silvery muscovite and a few grains of mica schist.

Cpl. Strang, whose home address is 1116 Elm St., Peekskill, N. Y., is a young friend of the Editor of R. & M.

Beach Sand from Portuguese East Africa

Ernest M. Skea, Box 46, Pilgrims Rest, Transvaal, South Africa, has sent us a number of interesting sands. One of the sands comes from Polana Beach, Lourenco Marques, Portuguese East Africa (Mozambique). A paragraph in his letter dated October 28, 1951, reads as follows:

"Polana Beach sand from the shore of Delagoa Bay at Lourenco Marques, capital of Mozambique (Portuguese East Africa). I collected this sand during a vacation at L. M. a couple of years ago."

The sample is a brown, medium grained sand consisting entirely of quartz (smoky, brownish) and sea shells (white, gray, brown). The shells vary from broken fragments to tiny complete ones.

The beautiful Polana Beach, with its picturesque background formed by the red cliffs and a mass of luxuriant deep green vegetation, is one of the finest stretches of sand along the South African coast.

Beach Sand from Amanave, Samoa

Amanave is a village on the west coast of Tutuila Island, Samoa Islands. From the beach at Amanave we have received an interesting sample of sand that was sent us by Max Haleck, Pago Pago, Tutuila, Samoa.

The sand is light brown, medium to coarse grained consisting chiefly of small sea shells (white, brownish, reddish) and broken up white to grayish coral. Small amounts of black magnetite and black basalt also present. Some of the shells fluoresce cream under the long wave lamp.

Tutuila is an American island in the Pacific Ocean.

Scheelite Sand from Montana

A letter has been received from Mr. and Mrs. Leland Hughes, Box 66, Hall, Mont. Part of the letter reads:

"Mr. and Mrs. Ed Dowse of Salt Lake City, Utah, were here to visit the sapphire diggings and Ed told me you had a sand collecting column in R. & M. I am mailing you a small bottle of scheelite sand from Henderson Gulch, about 7 miles from Hall (Granite Co., Mont.).

"According to the government engineers, there were no placer deposits of tungsten in the United States.

"After holding up the H. & H. dredging operation (in Henderson Gulch), they operated all through World War II."

The sample is a coarse brownish sand consisting chiefly of scheelite (brown, white, green), with magnetite (black),

garnet (pink), epidote (green). The scheelite fluoresces pale bluish under the Mineralight (short wave).

Garnet Sand from Diamond Ledge, Conn.

Some few months ago we received a nice sample of garnet sand from W. A. Scotchmer, 4645 Meadowbrook Rd., Niagara Falls, N. Y. The sample comes from Diamond Ledge, West Stafford, Tolland Co., Conn. This is a coarse dark red sand consisting chiefly of red garnet with quartz (colorless, smoky, white). The garnets are nicely rounded, some show crystal faces, and many are gemmy. Diamond Ledge is a noted quartz crystals locality.

Glass Sand from Rockwood, Mich.

From Thomas A. Oleszkowicz, 6969 Parkwood Ave., Detroit 10, Mich., we received recently a very nice sample of glass sand from Rockwood, Wayne Co., Mich. This is a fine grained pure quartz sand, white in color though the individual grains are almost colorless. The label with the sand reads:

"Sand — Sylvania Formation, Silurian Age. A relatively pure sand (97%+ silica) used in the manufacture of glass for milk bottles, automobile and plate glass.

"From the Rockwood quarry (Michigan Silica Co.), Rockwood, Wayne Co., Mich."

The Rockwood quarry is noted for its calcite and celestite xls and it was written up in the November 1947, R. & M., p.1012.

Beach Sand from Lake Kezar, Maine

E. L. Sampter, 49 West 45th St., New York 19, N. Y., sent R. & M. an interesting sand which comes from Farrington's Beach, Lake Kezar, Center Lovell, Oxford Co., Me. And with the sand came a post card view of the lake and beach. The card, dated July 17, 1952, carries this message:

"Sand from this beach for your collection.

"One of the very few pure white sand beaches at an inland lake in Maine. This is the only spot where it is natural and original; at other beaches it has been brought in."

The sample received is a coarse brownish-gray sand consisting chiefly of quartz (colorless, smoky, milky) with feldspar (brownish, white), and a very minor

Farrington's Beach, Lake Kezar, Center Lovell, Maine.

amount of silvery muscovite. (On the beach the sand looks pure white).

Creek Sand from Polk Branch, Texas

H. B. Smith, 2349 Butternut, Abilene, Texas, sent R. & M. a sample of creek sand from the Polk Branch, on the Polk farm, 12½ miles northeast of Mason, Mason Co., Texas. This is a coarse grained brownish sand consisting entirely of quartz (smoky) and feldspar (white and flesh colored). The grains are all of rough irregular size and show little if any rounding. Polk Branch heads on the Polk farm and flows into the San Saba River.

Magnetite Sand from Big Horn Mts., Wyo.

Our first and only sand sample from Wyoming was sent in some few months ago by K. S. Moore, 1040 South Thurmond, Sheridan, Wyo. His letter, dated February 17, 1952, carries this message:

"The sand comes from gold claims of mine in the Big Horn Mts. at a spot where the county line common to Big Horn and Sheridan counties crosses. The claims are about 28 miles east of Lovell, Wyo., and about 72 miles northwest of Sheridan, Wyo."

This is a brownish-black medium grained sand consisting chiefly of black magnetite and quartz (smoky, brownish).

Beach Sand from Nice, France

Not long ago Edmond Zeebroek, Villa La Mirada, Av. des Hesperides, Nice (AM), France, sent us a sample of sand from the beach of his city which is on the Mediterranean Sea. This is a dark gray coarse sand consisting of white calcite, gray to dark limestone, with some smoky quartz and a little black magnetite. The calcite fluoresces yellow under the long wave light.

Beach Sand from Monaco

Monaco, on the Mediterranean Sea, is one of Europe's smallest countries, only 8 square miles in area. From the beach of the city of Monaco, a sample of sand was sent us by Edmond Zeebroek, Villa La Mirada, Av. des Hesperides, Nice (AM), France, This is a coarse dark gray sand consisting chiefly of white calcite and various colored limestones, with a little clear to smoky quartz, a few silvery muscovite flakes, a little black magnetite and some fragments of red brick and broken glass. The calcite and some of the limestone fluoresces yellow under the long wave light.

Olivine Sand from New Guinea

On the north shore, near Lae, New Guinea, is found a dark green olivine sand, with a little black magnetite. This is an interesting beach sand. Lae is on the north shore of Huon Gulf, an arm of the Pacific Ocean.

Magnetite Sand from Pt. Protection, Alaska

Frank H. Waskey, Dillingham, Alaska, has donated to R. & M. a sample of magnetite sand which are pan concentrates from a layer of black sand at Point Protection, Nushagak Estuary, 25 miles south of Dillingham, Alaska. This is a fine grained deep black sand consisting almost entirely of black magnetite. A little red garnet and some colorless zircon (fluoresces brown under the Mineralight) also present. The grains are all nicely rounded and most of the magnetite grains are bright and lustrous.

Beach Sand from Lake George, N. Y.

A recent visitor to the offices of R. & M. was Thomas Ronan, 2436 Marion Ave., Bronx 58, N. Y., who left with us a nice sample of beach sand from Weeds Bay in Lake George, Washington Co., N. Y. This is a dark gray fine grained sand consisting chiefly of quartz (colorless, smoky, brownish, reddish, white) with black hornblende. Minor amounts of white feldspar, pink garnet, and a very small amount of black magnetite, are also present. A note with the sample reads:

"This is a sample of sand from a small beach about 3 miles south of the town of Ticonderoga and ¼ to ⅓ of a mile south of a small point known as 'Black Point.' The cabin and the property, including the beach, is known as 'Ledger Lodge.' It is on the northeastern shore of Lake George and in Washington County, N. Y. Practically opposite is a steep mountain known as Rogers Rock and Slide, (down its precipitous face in 1758, Major Robert Rogers, leader of

the Rangers, is supposed to have slid down here to the shore of Lake George to escape Indian pursuit after the "Battle on Snowshoes' (N. Y. State Vacation Lands Guide, page 101). The beach is on Weeds Bay."

Beach Sand from Pokai Bay, Hawaii

Last May Mr. and Mrs. R. L. Sylvester of 154 Parkside Ave., Syracuse 7, N. Y., made a trip to the Hawaiian Islands and brought back with them many minerals and sand specimens. One of the localities stopped at was Pokai Bay Beach, on the Farrington Highway, in the western part of Oahu Island, the third largest island of the group. From the beach at Pokai Bay Mr. Sylvester collected a nice sand sample for us.

This is a medium grained gray sand consisting almost entirely of tiny fragments of sea shells (white, brown, yellow, pink, red, black). The shells are so rounded and polished that they have lost all semblance to their original form. Most of the shells are so highly polished that they have a pearly luster. A few shell grains fluoresce yellow under the long wave light. Some black magnetite and a few pale green gemmy olivines are also present.

Beach Sand from Truro, Mass.

Some few months ago we received from Rev. William J. Frazer, 625 Main St., Moosic 7, Penn., a sample of sand that he had received from Mr. R. L. Boleyn, 47 Hancock St., Lexington, Mass. Mr. Boleyn had collected the sand from the beach at Truro, Barnstable Co., Mass. (Truro is on Cape Cod, on the Bay side of the Cape near Panet River).

This is a dark gray medium grained sand and all quartz (colorless, smoky, brownish).

Lake Sand from Franconia, N. H.

Arnold M. Dixon, Chestnut St., R.F.D. 403, Foxboro, Mass., has sent R. & M. a large number of sand samples among which is one from Profile Lake, near Franconia, Grafton Co., N. H. Profile Lake is near the famous "Old Man of the Mountain" (also known as "The Great Stone Face"). The Old Man of the Mountain is said to be the most perfect natural stone face in the world. It is 40 feet high and is on the south end of Cannon Mountain (in Franconia Notch) 1,200 feet above Profile Lake.

(Photo by R. L. Sylvester)

Pokai Bay Beach, Farrington Highway, on Oahu Island (Hawaiian Islands). Field trip of May 11, 1952. Left to right, Mrs. R. L. Sylvester, E. H. Anderson, Jr., Dr. D. G. Chrones and two unknown boys who wanted their picture taken.

The sand is gray in color and coarse, consisting chiefly of smoky quartz and feldspar (white, brown, pink) with some black biotite and black tourmaline and a few black magnetite grains. Some of the tourmaline is in sharp little xls and some of it is imbedded in quartz.

SANDS FROM HISTORICAL SPOTS

I have in my collection many sands which have historical significance, such as, sand from "Discovery Spot" where Marshall discovered gold in California in 1848. From Plymouth Rock, where the Pilgrims landed in 1620 at Plymouth, Massachusetts. From Valley Forge, Pennsylvania, where General Washington wintered his depleted army in 1777 and 1778, the story which is so familar to every boy and girl. And James Whitcomb Riley's "Ole Swimming Hole" from

whence comes his poem. And many others.

But here is one from Denmark, and one from South America which are quite unfamiliar to most of us.

I once knew a very beautiful Danish maid who was a teacher in a Girls Summer School at Union, Maine. She returned to her native land and sent a very interesting sample of sand to Mr. J. Clarence Moody, also of Union, who very generously shared with me the sand and the following story:

"A long time ago there lived a man named Marsk Itz. Marsk is a title in the army. He did not like the king of Denmark and they thought he and Rane Johnson, one of the king's servants, killed the king when he was on Fin, an island to Denmark. Later it was learned that it was them that did it and they become outlawed from Denmark. Marsk Itz built a tower on a hill called Marsk Itz, and it was from this hill I got the sand." Signed: Ingrid Harbo.

From the same Mr. Moody comes black sand from Lake Titicaca in South America with this story:

"This lake was the sacred lake of the Inca People who long ago ruled all of Bolivia and Peru, long before the Spaniards came to its shores. This was the Arnold Lake where once upon a time the great Manco Kapaj (who was the first to arrive there) used to live and rule all of Bolivia and Peru."

History is only one of many phases that make sand collecting interesting.

Homer A. Davis,
524 Putnam Ave.,
Cambridge 39, Mass.

The Mineralogical Society of Pennsylvania Concedes to The Georgia Mineral Society's Claim As First Earth Science Organization To Gain State Recognition!

Editor R. & M.:

In your July-August issue of ROCKS AND MINERALS it was stated that the Georgia Mineral Society has had the fullest cooperation and endorsement of that State's Geological Survey since the founding of the Society in 1935.

We, of the Mineralogical Society of Pennsylvania, wish to take this means to retract our former claim to this distinction and concede the honor to our fellow Society, the Georgia Mineral Society.

The error was unintentional and The Mineralogical Society of Pennsylvania regrets this inadvertent mistake.

Leonard J. Duersmith, President
The Mineralogical Society
of Pennsylvania

August 18, 1952

ROCK VIEW POST CARDS

In the last issue of R. & M., mention was made about receiving a number of rock view post cards from Mrs. Lera A. Hegel of Los Angeles, Calif. One card bore this message:

"Ever try to get a collection of "Rock View" post cards from all over the world? Bet there are plenty of them!"

To date, 17 cards have been received from Mrs. Hegel, all showing rock formations, sand beaches, etc.

No sooner did the July-August issue come out, then we received 24 post cards (all in a group) from Merton McKown, 114-20 146th St., So. Ozone Park 36, N. Y. These also showed rock formations, etc.

In the meantime we ran across a number of cards sent by other friends and have sorted them out by states and countries.

During the course of years we have received a large number of rock view cards, all have been saved but stuck away; as these cards are run across they will be added to the above assortment. To date we have a collection of 77 from 22 States, Hawaii, Brazil and Mexico. California heads the list with 14, New York 11, Kentucky 7, Arizona 5 — the others from 1 to 4. This is an intensely interesting collection and we would urge all readers to make one of their own.

Club and Society Notes

Attention Secretaries—Please submit neat copies. Give dates and places of meetings. Check names for correct spelling.

Orange Belt Mineralogical Society

On Sunday, July 13, 1952, the O.B.M.S. members and their friends enjoyed the second picnic of the summer at Sylvan Park in Redlands, Calif. The announcement card read: "Bring a Rock for Trade." The members wholeheartedly cooperated. More than 100 rock specimens changed hands with no money involved. On the table, in addition to the numerous petrified woods of California, Nevada, and Wyoming, were two large pieces of that beautiful wood from Arizona. There were also several groups of geodes, all cut and polished, a large piece of Ankerized-Antigorite from Rawhide Flat, California, several beautiful specimens of opalized wood, and even a slice of that rare Tempskya, the petrified fern bulb from Oregon. All the members I talked with were most pleased and excited over the swaps.

The June picnic was very different. The announcement card read: "Please bring rocks for a rock auction." As usual, the members out-did themselves. But Carpenter proved to be a marvel at auctioneering. He coaxed and kidded the members into contributing over $95 to the treasury of the O.B.M.S.

The Thumb-Nail group of the O.B.M.S. met at the home of I. V. Graham in San Bernardino, Calif., Friday evening, July 11. Each Thumb-Nail meeting is presided over by a member of the group, who presents a study period talk on a subject of his own choice. After the lesson, informal discussion and examination of the new T/Ns is enjoyed. Nearly always, some of the members have acquired new specimens of material for trade or to "crow" about. Everybody is working hard to produce one outstanding thumb-nail box to enter in the competition at the Christmas party.

August Meeting

Sunday, August 10, around 65 O.B.M.S. members and their friends met at Sylvan Park in Redlands for a picnic. After partaking of a bountiful supply of pot luck and all the watermelon the group could eat, Ike Graham, the new president, called the meeting to order. Plans were discussed for the O.B.M.S. show, which will be held October 25 and 26, at the Industrial Building of the National Orange Show at San Bernardino, Calif. Vice-president, M. L. Moberly and Mrs. Moberly were vacationing in Idaho. George Tyler, the new treasurer, was present and busy collecting dues for the coming year. John Short, the new recording secretary, and Ray Scherzinger, the new corresponding secretary, were both on the job. The next O.B.M.S. meeting will be the last picnic of the summer for the group, and will be held September 14, at Sylvan Park in Redlands. Any rock hounds in the vicinity are most welcome to picnic with the group.

The O.B.M.S. Thumb-Nailers met at the home of Bob and Berta Boyler at Riverside, Calif., Friday evening, August 8. Thirty-two members and their friends sat down to an over-loaded table of home cooked food brought by the group. The host and hostess served iced tea and coffee and a freezer full of delicious home-made ice cream. After the dinner, Hazel Scherzinger took charge of the study period. The topic discussed was "The Electron Theory and its application to Minerals." We learned that, after the discovery of radium by Dr. and Madam Curie, the old belief that an atom was the smallest part of an element and always remained constant, had to be revised. Scientists found that the atoms of the elements were constantly being broken down into many positive and negative particles of electricity. These particles then united with others to form compounds. Joe and Francine Saruwatari brought a box of T/N specimens of native copper from Calumet, Michigan, so that each who wished might have a specimen for free. A pleasant evening was enjoyed by all who were there.

6th Annual Show

The sixth annual Gem and Mineral show of the Orange Belt Mineralogical Society will be held Saturday and Sunday, October 25 and 26, at the Industrial Building of the National Orange Show at San Bernardino, Calif. This is not only one of the most popular but also one of the best attended gem and mineral shows in the state. Last year nearly six thousand people viewed the exhibits and enjoyed the hospitality of the group, and the delicious home cooked food served at the "Chunk Wagon." The O.B.M.S. is one of the few gem and mineral shows that draws its exhibits entirely from its own membership. There will be plenty of free parking space available and fun for all. No admission charge. You are cordially invited to be the guests of the O.B.M.S. for this great show.

Ray Scherzinger
Corresponding Secretary
6991 Valley Way
Riverside, Calif.

Gem Of A Magazine!

Editor R. & M.:

Fined enclosed $3.00. I wish to renew my subscription for ROCKS AND MINERALS. Never take me off your list as I like that gem of a magazine.

Oscar H. Lehman
270 Schuele Ave.
August 12, 1952 Buffalo, N. Y.

Cincinnati Mineral Society

The regular monthly meeting of the Cincinnati Mineral Society was held January 30, 1952 at the Cincinnati Museum of Natural History, Cincinnati, Ohio. Mr. Charles Gschwind, President, opened the meeting by welcoming the following guests:

Mr. W. R. Welch
Robert Ante
Robert Bryant

Mr. and Mrs. Pagnucco were accepted as members of the Cincinnati Mineral Society.

Mr. Gschwind announced that Miss Spellmire will be treasurer in place of Mr. Gibbs. The officers for 1952 are:

C. L. Gschwind, President
Dudley Levick, Vice President.
Miss Spellmire, Treasurer
Fred Keitel, Secretary

Mr. Gschwind appointed the following committees:

Program: Tom Weibel, Chairman; Grover Hubing, Gerald Friedman, John Pagnucco, Edgar Sarles, Advisor.

Publicity: Frank Atkins, Chairman; Miss Brockschlager, Carl Weigand, Mrs. Fox.

Membership: Mrs. Ralph Clark, Chairman; Carl Stephany, Miss Spellmire, Mrs. Currie.

Field Trip: Ralph Clark, Chairman; Edgar Sarles, E. T. McCarthy, Fred Keitel.

Mr. Walter C. Brown of the Ohio State Geological Survey was introduced by Mr. Sarles. Mr. Brown gave a brief history of the Geological Survey in Ohio. The Survey was started 114 years ago with a sum of $1,200. There have been 14 State Geologists to date. Ohio ranks fourth in mineral wealth but only thirtieth in line for the amount of money appropriated for geological survey. Mr. Brown offered the use of cases for mineral exhibits at local conventions and sportsman shows.

Mr. Gschwind introduced Mr. Grover Hubing as speaker of the evening. Mr. Hubing's subject was "Crystallization of Binary Systems."

Mr. Hubing drew some graphs illustrating the physical concept of latent heat of fusion and the determination of the eutetic point using an equilibrium diagram. Applying what we learned about conditions in a theoretical equilibrium diagram to a slowly cooling magma, Mr. Hubing showed that cooling crystals grow larger until the eutetic point is reached. This type of cooling may give a mottled surface as that of a phenocryst.

February Meeting

The regular monthly meeting of the Cincinnati Mineral Society was held February 27, 1952, at the Cincinnati Museum of Natural History.

The meeting was opened and presided over by President Charles Gschwind. Mr. Gschwind welcomed as guests at this meeting, Mr. Homer McCune, Mr. Frazer Rhodes, Mr. and Mrs. Welch, Robert Ante, Robert Bryant, Joe Zistler, Paul Mayer, Elmer Obermeyer and Rodney Hoff.

Miss Spellmire reported a balance of $26 in the treasury.

At the request of Mr. Gschwind, Mr. Weibel, introduced Dr. Gerald Friedman as the speaker of the evening. Dr. Friedman's subject was "Adventures of a Mineralogist and Rockhound in the Canadian Bush."

Dr. Friedman discussed the Cortland Complex and Niagara Falls before delving into his main subject of the Canadian Shield whose rocks are pre-Cambrian and estimated to be over 1½ billion years old. Very excellent color and black and white slides were shown of the basic igneous intrusions and the country surrounding the Georgia Bay region. Dr. Friedman's talk was interspersed with humourous stories of the antics of snakes, porcupines, squirrels and mice.

Rocks and minerals discussed and displayed by Dr. Friedman were basic pegmatites, chlorite, nickel ore, perthite, diorite, graftonite, augite, uraninte, feldspar, torbernite, purpurite and gneiss.

March Meeting

The regular monthly meeting of the Cincinnati Mineral Society was held Wednesday, March 26, 1952, at the Cincinnati Museum of Natural History.

Mr. Grshwind opened the meeting with a welcome to the good crowd of members and nineteen visitors: Lynn Arnold, Mrs. L. J. Funke, Mr. G. P. Hart, Jr., Mr. and Mrs. Rollind Silver, Mrs. Welch and son, Mr. and Mrs. C. P. Long and Miss Persis Long, Mr. and Mrs. Ernest Guckiean, Mr. C. L. Perry, Miss Emily Fessenden, Miss Kay Heitzman, Mr. Joseph Elbert, Mr. Homer McCune, Mr. James Montague, and Mr. and Mrs. Howard Bradtmueller.

Miss Spellmire, reported having $56 in the treasury and expenses of $25.45, leaving a balance of $30.55.

Mr. Welch, Robert Ante, and Robert Bryant were nominated and accepted as members of the Cincinnati Mineral Society.

Mr. Clark announced that a field trip will be made to Ford and Stevens Creek and the Indiana Quarry on April 19 and 20.

The speaker of the evening, Mr. Barry Bishop, was introduced by Dr. Gerald Friedman. Mr. Bishop's subject was "Minerals, Rocks, Glaciers, and Adventures in the Mt. McKinley Wilderness, Alaska."

Mr. Bishop was one of a group of eight men to scale the 20,270 foot west side of Mt. McKinley. The expedition was jointly sponsored by Denver University, Boston Museum of Science, U. S. Air Force and the University of Alaska.

Starting with a reconnaissance flight in an Army B-17, Mr. Bishop took us on a trip to the top of Mt. McKinley via beautiful color slides. A general description of the geology of Mt. McKinley was given from paleozoic

times when it was under a shallow sea until pleistocene times when the systems of glaciers finished a sculpturing process.

Some of the equipment which Mr. Bishop used while on this trip was displayed. These included an ice ax, rope, windproof-wool parkas, goggles, shoe pack or climbing boots, crampons and spikes used for scaling vertical walls of ice.

At the beginning of the climb the party was split into two groups. One group was flown in by airplane to establish a base camp at 10,000 feet. The second group walked in mapping the area and placing survey markers. The climb to the top of Mt. McKinley was accomplished by establishing a group of secondary camps above base camp. The most modern equipment was used; this included a two-way radio for communication between camps. A total of 3,300 pounds of supplies were dropped by the Air Force airlift.

The party was flown out by a two-seater Super Cub equipped with skes.

Although this rewrite of Mr. Bishop's adventure seems a little dull, I feel that this was one of the best adventure experiences that I have heard.

April Meeting

The regular monthly meeting of the Cincinnati Mineral Society was held Wednesday evening, April 30, at the Cincinnati Museum of Natural History.

The meeting was called to order by Dudley Levick, vice-president, in the absence of Mr. Charles Gschwind.

Miss Spellmire, treasurer, reported a balance of $51.33 which included $2 from members' purchases of specimens brought to the last meeting by Dr. Gerald Friedman.

Miss Spellmire announced that the membership totalled twenty-five and that each member should have been given a membership card. Any member who does not have a card should contact her.

Mr. Levick read a letter from Mr. Russell McFall of Chicago which announced that the magazine EARTH SCIENCE DIGEST had been taken over by several well known mid-west men and that subscriptions would be accepted.

Mr. Edgar Sarles reported on the field trip to Bloomington and various creeks. Many silicified and distorted fossils were found.

The next fiield trip will be to Copperas Mountain at Bainbridge, Ohio. Mr. Clark will advise the members of the details later.

The speaker of the evening was Mr. Lawrence H. Lattman from University of Cincinnati graduate school who was introduced by Dr. Gerald Friedman. His subject was "The Land Forms of the Earth, A Key to the Underlying Structure and Its Effects on your Life and Mine." The talk was essentially an introduction to Geomorphology.

Mr. Lattman discussed the erosion cycle, the opposite effect of diastrophism, and the selectivity of erosion. It was explained that these forces had a marked effect on our lives because they determined the direction and pattern of highways, transportation and communication. As a result our industry and culture was influenced by these conditions. Slides of aerial and scenic photographs and roadmaps illustrated the points Mr. Lattman made.

The precentation was kept simple and was given in an interesting and fluent manner.

May Meeting

The regular monthly meeting of the Cincinnati Mineral Society was held at the Cincinnati Museum of Natural History on May 28, 1952.

President Charles Gschwind opened the meeting by welcoming as guest Miss Fox, a charter member of the Mineral Society. Mr. Gschwind also welcomed as guests Mrs. Wilke and children, Mr. and Mrs. C. P. Long, Miss Persis Long and Mr. Jacob Epstein.

Miss Spellmire reported a balance of $66.48 in the treasury.

A field trip was announced. This was to be to Copperas Mountain on June 15, 1952.

Mr. Gschwind suggested shipping local collecting material to the Midwest Federation of Mineralogical Societies which will hold its convention in St. Paul, Minnesota, on July 1, 2 and 3 of this year. A committee for this project will be picked by Mr. Gschwind and notified by mail.

A letter was read by Mr. Gschwind which he received from Irene Takas. She wished to call attention to the fact that Mr. McCarthy has been very kind to her while she was in the hospital, by writing cheerful letters and sending mineral specimens to her. Our hats are off to Mr. McCarthy for his kindness.

Mr. Gschwind introduced Mr. John Pagnucco former President of the Chicago Mineral Society. Mr. Pagnucco spoke on the Michigan Copper Country.

The copper country is a narrow plateau 100 by 300 miles. Mr. Pagnucco used maps and diagrams to show the geology of the area. Some very nice color slides of the copper country helped make Mr. Pagnucco's talk very interesting. Some of the minerals shown and discussed by Mr. Pagnucco were microcline feldspar, specular hematite, chrysocolla, native copper, bornite, chalcocite, prehnite, calcite with copper inclusions, crystallized silver, epidote crystals, pyrites, polished agates and others.

After the meeting, minerals that were donated by Mr. McCarthy and Mr. Woodward were sold to bolster the treasury.

Fred Keitel
Route 1
Harrison, Ohio

Columbian Geological Society
(Spokane, Washington)

Twenty-five members of the Columbian Geological Society traveled back some millions of years on Sunday, June 20, 1952, into a real "forest primeval." We explored among the shades of old trees dead for many eons. Near Lincoln, Washington, on the banks of the Columbia River, are many basaltic lava casts of large and small trees and occasional branches. The location may be reached by going west through Davenport almost to Creston, then north to the river near the property of the Lincoln Lumber Company.

The exposures lie at the first westward bend of the Columbia River south of the junction with the Spokane River. The area is less than 60 miles from Spokane and about 30 miles east of Grand Coulee Dam.

This is a spot which is little publicized. Here are probably as many as thirty casts and cliff face remnants, mostly still standing as in life, with three or four fallen tree casts, lying at the former ground level, among them. The largest observed casts are about 5 feet in diameter.

The casts commonly have a large part of the wood still in place, some of it opalized. The latter is usually ruined by ground water damp some of it is about normal or maybe charred. Some agatized material has been found in the talus below the basaltic cliffs, also some opalized material suggestive of decayed wood fragments in "altered soil."

The upper few hundred feet of the cliff is all pillow lava, or balls, a very prominent feature. At the base of the ball lava stratum are the soil and subsoil baked by the hot lava and sometimes having minute steam holes. All is compacted by the lava's weight to much less than the original thickness. The casts "stand" on this stratum, which, in turn, lies on the surface of an older, massive lava flow. The ball type lava, the steam holes in the baked soil and the survival of the tree through their contact with the hot lavas all point to the probability that a very deep, lava-dammed body of water immersed the trees long enough, before the hot lava reached then, to water-log them. When the hot flow covered the trees in the water, the lava quickly lost some of its heat and thus formed the balls, or pillows.

In the following ages, silica-bearing waters penetrating down through the lava to the trees began the process of substituting for the molecules of the trees the silica in the water, thereby preserving the appearance of tree structure. Some of this replacement material gradually weathered away after fracturing.

About one mile, or less, west of the casts, and at about the same level, is a very coarse conglomerate "river red" layer between the pillow lava flow and the massive lower lava. About 5 miles eastward there is a large exposure of a peculiar talus-like material, possibly granulated by the lava plowing into the water. This material lies between more massive lavas. The location of this material seems to be at about the same level as the base of the covered trees just described. The two conglomerate explosures suggest an inter-lava drainage from the north and northwest of two streams just south of the casts, or possibly one broad phase of an ancient Columbia River channel across the region before the coming of the ball lava. This soil and the presence of the tree casts are suggestive of a land surface that had developed through long years between the two ancient streams and suggestive of a Columbia River channel existing long before the final lavas covered the region. The larger eastern exposure would be related to an older Columbia, and the smaller western conglomerate could be related to an earlier Whitestone Creek coming south-eastward out of the Southern Okanogan highlands, possibly to join the Columbia somewhere south of the old forest group.

These fine tree casts were made over five million years ago. Probably there are many more back in the mass behind the cliff face.

Charles Magee
Field Trip Committee
Columbian Geological Society
Stanford Hotel
Spokane, Washington

Rochester Earth Science Society

The Rochester (Minnesota) Earth Science Society held its annual meeting on May 12, 1952. It was a dinner meeting and exhibits had been arranged by five members. There were 60 members present.

The program included a talk by Dr. Duncan Stewart, Jr., chairman of the department of Geology at Carleton College. His subject was Antarctic Geology. He gave each member present an anorthoclase crystal from Mt. Erebus near the Ross Sea. His slides showed how difficult rock collecting is in the Antarctic. The article in March - April 1952 ROCKS AND MINERALS *by* Lieutenant Peterson was a good preparation for this talk.

Harold Whiting, one of our members, told of a trip to Florida, collecting agate at Tampa Bay, petrified wood at Leesburg, La., quartz crystals at Hot Springs, Ark., and various minerals at Magnet Cove, Ark. and Joplin, Mo.

The following officers were elected for 1952-1953.

President, Ralph Parkhill; Vice - President, Harold Whiting; Secretary - Treasurer, Mrs. Frank Armstrong; Executive Board Members, Dr. Eunice Flock, Arthur Carroll, Mrs. Marvin Williams.

Mrs. Dana A. Rogers
Corresponding Secretary
820 - 10½ St. S.W.
Rochester, Minn.

Danbury Mineralogical Society

July 24, 1952. Regular meeting of the Danbury Minerological Society was held at the Museum, 83 Elm St. on Thursday Evening, at 7:30 P. M. The President, Irene Hartwell presiding. There were 20 members present.

The minutes were read of the previous meeting. They were accepted except for a correction made by Florence Anderson which stated that Gordon Dyke was voted in as a member at the previous meeting.

The Treasurer, Florence Anderson, read report. Cash on hand $38.50. Members voted to accept as read.

Unfinished Business—A motion was read by William Mann that a fund be received from the members for the placque for Helen Frede, charter member. The motion was seconded. Ronald Januzzi was appointed to buy the placque and have it inscribed.

The report on the field trip to Bedford, New York, was read and such minerals as Green and Yellow Beryl, Autunite, Garnets, Rose Quartz, Feldspar, Columbite, Hyalite, Uranophane, Tourmaline were to have been reported as found.

The Photostats are being made and the button will be ready by the next meeting. Mr. Boenisch will inquire about professional cost of buttons.

New Business—A field trip was planned for August 17, to visit Cheshire, Conn.

A Lecture on Streak Tests was given by the director, Ronald E. Januzzi.

The meeting was adjourned.

Mae Montesi, Secretary-Pro-Tem
7 Robinson Ave., Danbury, Conn.

Illowa Gem & Mineral Society

The Society held its first gem and mineral show at Davenport, Iowa. Show was originally scheduled for one week, public interest and demand to accommodate visitors extended it to three weeks. Show opened Sunday, May 11, and closed Saturday, May 31, 1952.

The exhibit was non-competitive but the attendance was far greater than we ever dreamed it would be. We held the show in the Davenport Public Museum and we had 4286 registered visitors. Old timers said it was the finest gem and mineral exhibit ever to be held in the middle west and also one of the largest. The director of the museum, Mr. Lowell Miller, informed us that this was the largest attendance since the opening of the museum in the year 1894. Wasn't that swell?

Here are a few high lights about the exhibits. The most beautiful was a gem exhibit by Mr. Charles Adams of Rock Island, Illinois. The largest was an exhibit of large agate chunks in the rough with one face cut and polished to show the public what was possible and the entire case was surrounded by rare specimens of rock crystals—this was the exhibit of Mr. Irving W. Hurlbut of Davenport, Iowa. Another outstanding exhibit was the opal collection of Mr. Russell Neuwerk of Moline, Illinois. This collection was worth the most money or at least cost the most to buy. It was Australian and Eden Valley Opal. The largest collection of faceted gems of all kinds was shown by Mr. Ed. Ahlers of Rock Island, Illinois, who is really a master when it comes to faceting and he has a beautiful collection. There were many others.

Among the ladies of the club to exhibit, the outstanding ones were a case of all kinds of geodes, split open, shown by Mrs. Dora E. Hoxey of Davenport, Iowa. Then there was a collection of fossils exhibited by Mrs. Irene Sheets of Davenport, Iowa. And the most interesting of the entire show was a collection of 49 different minerals, all identified, and a description of their various commercial uses. Also this entire collection was obtained from the world famous Magnet Cove near Malvern, Arkansas. This exhibit was prepared and shown by Mrs. Irving W. Hurlbut of Davenport, Iowa. There were many school children and in a few cases, entire classes, took notes regarding the educational value of this exhibit.

The largest commercial exhibit of agates, cut and polished cabochons, and lapidary equipment was shown by Mr. H. E. Roth of Waterloo, Iowa. And there was also a very fine exhibit of lapidary equipment by Mr. Robert F. Barrell of Lancaster, New York.

All in all, we had a wonderful show here, everything went very smoothly and after such great interest being shown by the public, we voted to have this an annual affair.

Irving W. Hurlbut
President, Illowa Gem & Mineral Society
2602 E. 32nd Rd., R. I.,
Davenport, Iowa

June. 7, 1952

Queens Mineral Society

The members of the Queens Mineral Society held their monthly meeting on May 9th and as usual the group was quite a large one. After various committee reports such as the one given with reference to the annual dinner held on April 23rd, (very successful) and other such matters, the Club members took part in a "Round table Discussion", the subject being phosphates. These little discussions are of great interest to both an amateur and an honest to goodness mineralogist. Specimens are always displayed at this type of meeting and there were many pieces of Lazulite, Libethenite, Amblygonite, Apatite, Turquoise and one very rare mineral "Hurlbutite" owned and treasurer by one of our collectors.

The September meeting will consist of an exhibit of personally collected minerals with prizes given to the best collection. This always proves to be a very interesting meeting.

Marie L. McKay, Secretary
111-20—106th St.,
Ozone Park 16, L. I., N. Y.

Jackson, Wyoming Club

Editor R. & M.:

Since I first wrote you for information on how to start a Rock and Mineral Club and subscribing for your wonderful magazine, we have started a Club. We were very fortunate in obtaining the help and teaching of Mr. Fred Toppan, who was for several years assistant Professor of Geology at Union College in Schenectady, N. Y. We meet twice a month in the High School building and Mr. Toppan lectures to us for a couple of hours. We have also been fortunate in obtaining about 50 mineral specimens from the University of Wyoming to have for class study.

This week Professor E.S.C. Smith, who is head of the Geology Dept. at Union College, in Schenectady, N. Y. came to Jackson to visit with Mr. Toppan. Professor Smith gave the Club a very interesting talk on Meteorites. He is a charter member of the Meteorical Society of America. Our Club feels very fortunate to have men like Professor Smith visit us.

Pearl I. Johnson,
Pres. Rock & Min. Club
Jackson, Wyoming

July 17,1952

Western Nebraska Mineral Society

The regular meeting of the Western Nebraska Mineral Society was held at Chappell, Neb., on Monday, May 5, 1952, in the basement of the Chappell Memorial Library. There were 16 members and four guests present. The guests were Mrs. A. C. Cabela and her children, Jerry, Jimmy and Dianne.

After the regular business meeting and announcement of new members, the program committee reported assignments for the coming year and some remarks were made by A. M. Leafdale, chairman of the display committee.

The program was in charge of Gordon Brooks who reported on Quartz Family minerals. Later he demonstrated use of his field Mineralite.

A tasty luncheon of coffee and home-made cookies was served by Mrs. Otto Brooks of Chappell at the close of the program.

June Meeting

The Western Nebraska Mineral Society held a picnic in Sidney, Nebraska, for the June meeting. The picnic was held in the Sidney city park June 1.

After lunch the group visited the opening of the new radio Station KSID and then went to the shelterhouse to view a display of polished rocks by the Sidney members.

This meeting was one of the highlights of the Rock Club's yearly program and enjoyed by all of the 35 members and friends in attendance.

July Meeting

A "swap picnic" is being planned by the Western Nebraska Mineral Society for the August meeting. Members will bring their own sack lunch and any rocks they want to trade to the home of John Bergstrom. The meeting will start at 6:30 p.m. August 4.

The July meeting was held in the basement of the library where Mr. and Mrs. Walter Peck held a discussion on the places to hunt rocks in Colorado and Nebraska. The discussion was illustrated with maps and pictures from articles in various magazines.

After the discussion members polished rocks on the various machines and lunch was served by Mr. and Mrs. Emmett Soule.

G. W. Brooks
Chappell, Nebr.

Austin Gem & Mineral Society

The Second Annual Gem and Mineral Show of the Austin Gem and Mineral Society will be held November 22 and 23, 1952 at the Baker School, 39th and Avenue B, Austin, Texas.

A Club For Those Who Cannot Collect!

Editor R. & M.:

I am a boy, 16 years old, and a junior in high school. I became interested in mineralogy and geology 2 years ago. I have never collected a specimen in my life but I do have a modest collection from 30 states and 6 countries.

The purpose of this letter is to reach individuals (boys, girls, adults—age doesn't matter) who like me are very much interested in minerals but cannot collect them. I would like all such people to write me and perhaps a club can be formed.

The area around here is all sugar cane farm land and no minerals can be seen anywhere.

L. F. Rodrigue
Raceland, La.

June 20, 1952

So. California Lapidary Asso.

The Southern California Lapidary Association announced today that its 1953 Gem and Lapidary Show would be held at the Long Beach Auditorium on August 14, 15, and 16.

The show will emphasize developments in technique and craftsmanship in the lapidary field, and will include some of the foremost collections of stones and workmanship. There will also be continuous demonstrations of cutting and polishing.

The last Gem & Mineral Show to be held in Long Beach was in 1948 and this proved to be the largest and most successful show of its kind ever held on the Coast up to that time. Indications are that the 1953 show will hold more appeal for the general hobbyist as well as the mineral collectors, because of the promise of finer exhibits and more "working" displays.

Aug. 25, 1952

PUBLICATIONS RECENTLY RECEIVED

Scenic Guide to Colorado, by Weldon F. Heald.

This is an interesting publication. It not only describes the scenic wonders of the state for which Colorado is famous but it gives much historical information and is full of geological and mineralogical references. The localities—town, cities, glaciers, rivers, mountains, canyons, etc. are listed alphabetically while numerous photos and maps add to the interest of its many topics. For all those interested in Colorado from any angle such as historic, geologic, mineralogic, geographic or scenic, we heartily recommend to you, *Scenic Guide to Colorado*. It contains 100 pages, is profusely illustrated and sells for only $1.50 per copy. Published by Scenic Guides, P. O. Box 288, Susanville, Calif.

Canadian Bulletins

The Department of Mines, Province of Quebec, Quebec, Canada, has issued the following reports:

The Mining Industry of the Province of Quebec in 1950—87pps. 2 pl., 1 fig.

List of the principal operators and owners of mines and quarries in the Province of Quebec, 1951—78 pp.

Normetal Mine Area, Abitibi-West County, by Carl Tolman, 34 pp. 4 pl. 1 map (in pocket).

Pontgrave—Bergeronnes Area, Saguenay County, by E. W. Greig, 27 pp. 1 pl., 7 figs., 1 map (in pocket).

The Department of Mines, Province of Ontario, Toronto, Ont., Canada has issued *Preliminary Report on Copper, Nickel, Lead, and Zinc Deposits of Ontario* (Second Edition, May 1952), by Jas. E. Thomson and Resident Geologists. 21 pp. large geologic map (in color).

Filer & Son's New Catalog

J. C. Filer & Son, 1344 Highway 99, San Bernardino, Calif., have issued a new price list. Perhaps we can do no better than to quote from their letter, dated Aug. 18, 1952:

"Under separate cover we are sending you a copy of our latest Mineral Catalog, which consists of 17 pages of mineral specimens, cutting material, books, and supplies. This catalog will be sent free to anyone requesting it. This Fall, 1952, Mineral Catalog lists many specimens which will be of interest to the collector. Many are in short supply, so those interested should order early.

"Our 34 page 1952 Catalog is still available. This catalog lists silver supplies and tools, lapidary equipment and supplies, as well as minerals."

Grieger's Issue 1952 Fall Price List

Grieger's, 1633 E. Walnut St., Pasadena 4, Calif., have issued a 1952 fall price list of mineral specimens and collectors supplies. It it a 12-page illustrated catalog. Their letter, dated July 15, 1952, tells us:—

"A copy of our latest Mineral Catalog is enclosed. This catalog is intended to aid the beginner and in no way do we wish to imply that we are offering fine crystallized minerals for advanced collectors.

"There is a tremendous new interest in minerals among the younger grammar school children. They stop in our shop to select inexpensive minerals. This catalog was published to help these students select their specimens.

"Frankly, we do not intend to make much profit on the specimens sold, but we do feel that it is necessary to stimulate their interest in minerals. During a time when increased mineral production is a vital national problem, it is wise to get a new crop of future mineralogists started.

"This catalog will be mentioned in our ad in your magazine. It is possible a few lines of editorial mention would help bring this to the attention of the readers."

A Report From Malaya on Tin

This is a 17-page illustrated publication on Malayan tin. Printed by the Straits Times Press Ltd., 140 Cecil St., Singapore, Malaya.

R & M — Western Touring Guide!

Editor R. & M.:

We took our May-June issue of ROCKS AND MINERALS this past summer and used it as a Western touring guide to mineral collectors. We stopped off to see Faye and Ed Dowse in Salt Lake City, Utah, and enjoyed their company on a 450 mile collecting trip to a secret agate field under the guidance of Howard and Dora Hanks. We visited Hap (Lewis) Vondrasek at Muddy Gap, Wyo., and he was very generous to us and a wonderful fellow. We are winding up our trip and are enjoying the hospitality of that fine rockhound pair, Vern and Mary Richmond, of Toledo, Ohio. We had some wonderful field trips to Western and Clay Center with the Richmonds.

Gerry & Will Shulman,
Aug. 20, 1952 Newark, N. J.
(The above letter was sent from Toledo, Ohio)

Has Been Missing Something!

Editor R. & M.:

I had never seen a copy of your magazine until yesterday. I think I have been missing something. I am enclosing a check for three dollars, please put my name on your subscription list at once. Ray Scherzinger
6991 Valley Way
July 14, 1952 Riverside, Calif.

A Surprised Contestant!

Editor R. & M.:

Thank you very much for giving me a copy of your book, "How to collect minerals." I was certainly surprised when I heard from Professor Pearl that I had won something. I didn't think that I would.

John Butcher
(13 years old)
August 24, 1952 Prescott, Ariz.

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